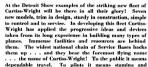




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ECLIPSE AVIATION CORPORATION

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CHARGE IL CALL Darm Arres Darm & Laure Charles P. Mullery People Court Stiller E. States Steven Jo Contributing Silver The Oldert descripes Astronometral Magazine

Cappright, 1953, by McGreen-Hell Publishme Constants, Inc.

CONTENTS FOR APRIL. 1931 Totale 24, Zingler 4

Der National Adventife Show of 1993 the Serious of the extensive activities above directory, a many of the extensive led, and a property of record A Printer of the Senset Short.
Fred manages of the street, make, and accounty published by the street, make, and accounty published. The Show from the Sales Managers' Vicepoint Appropriate on the special of consecutivel relation by some Tenring Enrope by Private Plane. 222
from Schooling Comment or Mr. Enrope's comment over any first of the Comment of the Comme Servicing Absurbt Instruments

Histories and property for the sharings and melananeous of Par Gannas Tura, 2s.

His more rendered and instruments



---TOCHANIAL ABSTRACTS THE SCHOOL TOO SOOS











"FLYING CONDITIONS ARE PERFECT IN LOS ANGELES COUNTY"... SAY THE





AVIATION









Complete detailed current and softenadine catedral on remove m Industrial Department, Lee Ascolo Chamber of Common

















AVIATION

COMPARE the many wonderful features of the new Family II for arrive respective with year own specifications. See how summistable they are filled. It is truly a universal namero Decisional arimarily for acrual obliques, the F-S. can also be used for acrial mapping or for plus ingraphy on the ground. Suitable film can be purchased at any supply score and it can be developed in any laboratory since the corners were cut thin as well as roll false. It is to have special film and a dark room with ham dress of dellars of special equipment Another entirely new feature of the F-5 is the rise, convenient method of changing the focus of the less. This can be accomplished without removes the careco from the operating position

as the control is accessible and the scale full-Above all the new camera is a Farehold product, which means such Farehold features in precision. manufacture, ragged alternal construction, and The same grams . . . the same skill that have made Fairchild military true setted consens the tendered of the world are representate for the Ed. eiters, sporterson fiyons, aerial photographers, nownpapers, commercial photographers and all these

waiting. And the price is only \$550 00. May we tell you mare about the new Fairsbild Fat! **FARCHILD AERIAL CAMERA CORPORATION** 270 West 38th Street, New York, N. Y. Factories: New York, N. Y., and Longwood (Manageral) F. O. Canada



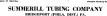




SUMMERILL ACCURACY Gives AUTOGIRO'S Rotor PERFECT BALANCE ...



The child covered of them have force that is do nabeled to the child covered of the third from their fine is do nabeled to the child covered of the third from their fine is in a control of the country of the child covered on the covered of the covered of the child covered of the ch



THE STRENGTH OF THE PLANE IS SUMMERILL TUBING

TUBING by SUMMERILL

SUMMERILL TUBING STRENGTHENED by

METLAB





SEE THE METLIS AND SUMMERLY THENNO COMPANYS EMBRIS 37 THE METONIA AIRCRAFT SHOP, DETROIT

METALLURGICAL LABORATORIES, INC.

PHILADELPHIA, PA.

THE STRENGTH OF THE PLANE IS SUMMERILL TUBING
HEAT TREATED BY

METLAB

"Make it less necessary for the pilot to do the right thing"*

IT has been estimated that security in the conventional airplane of todey is 90 perent dependent upon pileting skill. "... personal negley is governed, in the Autogieso, in ratio of about 10 percent pileting skill and 90 percent indexent aerodynamic mobility." The layrans has come to believe that learning

to pilot an sirplane is a long and telicon process. "After a new filter deminstration, and that of the asset elementary nature, a standard can be allowed to lowers the finer points of romenturing the Ausgino by hisself."

Relatively for persons have the natural against more processing to become conjectoric prices of the conventional sirplane, and the core of an dampile ... in placed in watch the course facilities.

en deine a motor our He

CHARACTER/STECS

Widespread development of the potentially great private market for alreroff can cononly when the private pilot of mediente shility can fly with the same confedence and sense of security with which he drives his car... "The adject of the roating-wing cruft is about as high as can be hoped for in any field of mechanical transcent."

The Astogito Coupensy of America is not a manufacturing or stiling company. It is only an engineering and licensing organisation. It owns and controls, exclusively, all Astogiro posters rights in the United States. Manufacturing companies of thigh aunting with the licensed to build Autogiros with the full co-operation of corr conjuncting and. We are now prepared corr conjuncting and. We are now prepared corrections, and to discuss producting neithers, to be a superior of the control of the conceration, and to discuss producting neithers.



The Antequity presents fritty chammers with hilleness impressible, it was state off it for a good after a tray dust trans, and numerically assume a many-denishing angle if trans if yeard from 10 miles from 50 mil







officers. In tune with the piller's more, the American special from point to point or wonders body



AUTOGIRO

THESE THREE TESTS TELL

The unparalleled performance inherent in every Ohon, of the Spendard Flying Schools, Los Angeles, Call, in recognize the most difficult and descriptional from facts - the succeed follows leaf. This during pilet descended 2,500 feet in a series of signag sidepilet descendes 2,000 seet as a series of management align, deapping about 500 feet each time, with The FLEET agreeds down, and the power of ... Starting and convincing scool of The FLEET'S instant rerecess and controllability Ofton says: "Its manner produling visibility, engineer and advantability for general training purposes, make The FLEET an institutional plane for student sentration."

PERFORMANCE



ECONOMY STRENGTH

Other replacing higher-powered and more expensive planes with FLEETS, President D. J. Burrett, Jr., of the Westshester Arrest Cornection, wester "Our stadens" by a full 150% ... Stadence shakamentic about its performance and rure of handling have become great board ore for The FLEET, and for our school." The FLEET'S seven. From recents, at a result of its low air-lower main-tenance cost, have made The FLEET the choice of the majority of and possible school operation. The TLEET's received. FLEET'S performance and occurring demonstrated at courty plane of higher power. In strength insures in the others, are all could importance to the numer to the school, are all could importance to the numer to the

The world's record of 46 manufe house was much by Peal Mante, of Pale Alto, Cal., to a stock PLEET shreath. Under every known advence mores, with a speed of 250 miles on boar on each dive, and careties a centrifugal force at the buttons of each loop receiving or and 45 minutes... The PLEET demonstrated its phe-nomenal stamms * The strength of The FLEET is its indesign and construction. It is built to withsteed along test error to set orders and consumerous more

FLEET AIRCRAFT INC. . BUFFALO, NEW YORK



BUSINESS CYCLES NOT WITHSTANDING

AVIATION FORGES AHEAD



"Washington to New York...New York to West. ington every hone on the home." What rould be more significant of the pr of eviation? What could more clea note that this remails advancing industry ing its economic place in modern is Air-minded cities last year are would ports today For more than a decade Austin has contributed to the education of the existing industry with home vision, accorded expressions . . . has sided many municipalities, expectations and

tion, conferment . . . in designing and building all this through eviation projects it has de-god in 60 cities, 26 states. By onlisting lated experience of mon who pic-And under the Assets Method of Updivided thelity con contract includes professionry post; it grangeraters total cost and a defaute comwith beam our prealty clause if desired Let your first step . . . the most important . . no, wire or write the nearest Austin office.



op & Sandary of Super-ord States Building." Sand ---

The Oldest American Assessmented Manager

...... April, 1931

EDWARD P. WARNER CO.

FOR INDUSTRY. A COMPASS AND A CHART

HE personnel of the aircraft industry are in the babit of thicking of themselves as a special case. marked field and who are still under the saed of the recoverable and violent chapters of the last thirteen ware they feel themselves to be apart from the general pages can own. body of industrial bartury. There has been one of the moubles of the last were

our own receipts. We have underestimated the extent to which we are controlled by the same evapower leave operating upon every advantal activity from the making of perambalatars to the sutters of treshences. The course of greend business in the past year has been The fact that we have truebles peculiar to ourselves and practical experience. that there would have been some depression as acrossed and undertakings even if there had been more or the general business world, does not make it say the less desirable for us to learn all that we can from observing thoughtful study by the abscraft laduatry. There are the pungs of the other viction of the case of economic colic which has affected the whole crefited world during

We have been having business creigs, with seriodic

boson and periodic depressions, for two contarios, but there is nothing to be said for the tradition of having then except that it is a venerable one. There it as sacase for stelest buttuess cycles. We have been realising curatives to them as though they were as servisable as the riving and falling of tides, and so inscrupable and as remote from our operad as the merious of the to which no previous experience applies. Many of them heaven'ry bodies, quite long enough. They represent men whose business life has been limited to the aero- nothing but a break-down of busine intelligence and a man absorption of common sense, and what the breakdown of satelligence can cause, the application of invelle-

To the overweign of future depressions the McGraw 2021 Publishing Company, publishers of Asserver and We have bed an examerated idea of the peculiarities of of some story other business magazines, has reade its contribution in the preparation of the Photogra for Assertices Deciment, englated as a numbers out with this name of AVEATION. The content of the platform is not the reselt of a state decision, new in it the primary of some single individual. It is the product of profound count nothing to which to point with profe, and it has afferded outloo and delate by students of and workers in many to precedent which we shall reds to follow in the faster, branches of imparity and precedent which we shall reds to follow in the faster, but it has pleety of leasons to book, and they are just an clusions have been checked by unbounted to business body seeded in the success industry as anywhere else. Indian of even some veried specialized interests and The Photonn for Besences is the result. It has been

generously applicated by these who have excussed it prior to prosent distribution. It deserves careful and some powers in the pictions that do not apply to our inweedicte case, but there are others that we should take Particularly partisent is the recommendation for a

198 regular program of research, addressed both to the de- tunity for deliverees of opinion. Everyone who wants relationed of a better resolver and to a better knowledge of the available markets. In a time of depression effort and expenditure. The suggestion that such expenfiture he treated as a suplial cutter deveted to the development of lasting assets, not as a charge against current

The reconsensation of long-tape planning made by sere, we shall have to odcet our own definition of "lonetime." We may be limited to an outlook of one or two cetablehed are looking ahead for three or five has we should strain our vision to look ahead as far as secreble. The unhanger experiences of a year are have discoved the andustry to take things as they come from day to day and to set stone without forecasting. Admeteda, et al. on eary matter to plan pow for the necessar of the mr. ereft industry in 1932. Admittedly, it is necessary to keep conduction schedules and other arrangements form Bit is the extreme, but the rise and the scholate should he there as a base on which to build. The accord of the general objections of the Personal Platform is no

rate univers. We have recolorly close and friendly sale clarece that "American business should entogrape selfcontinuent" in just as tree for our besteen an for any other

So far as the sireraft business possesses economicates as a business we are unfortunate. Most of the neculiarsten in our economic situation have had puncte at least tensessed webagoy. We shall cain stability and crosservice and regain confidence to correlate, as proportion as we are recreatives on the more footing with other indushelps to point the way

DETROIT. 1931

OR the first time to several years the industry in attention upon a single show. Last year there were lovel pertisses of Detroit who stayed away from St. Logs. and there were certainers for the New York market who ignored Detroit. This spring there is no occur, then the sub-back to simplest enveloping and sales has

to detailer his wares in the substity will come to the The above revenien to be more salar and husiness like than new of its predecessors. Company the available state has been taken, almost without exception, by solid and stable corporations. The irresponsible exhibitor flattering on the brink of extinction, often summanes at

the part, will be consumposely about It is personally fortunate that it should be no fee there are a number of accretion in our attackers on 2011 come. There are a number of programmed questions. and the servers our best be received as a consent asyears in our detailed plan, while other industries leaver south. There are varying recordings that are said. speculative as Avanteur goes to press, but will be reach less so the last of April Events in and around the recestions bangur at the Detroit City Awport are going to be no exceptionally sensitive basessees of public For expressly, the lasts planes will most their becomes

and prevent test. I not used the few monthmen of that type that were about attracted to interest course of metroic, but their very needly made them a seven-days' wonder and subtated against any fair indepent of their laster qualities in the industry or their pacinious and second to the public. The nonewhat appractical observation "Ain's et center", or its equivalent, was bound with discounter frequency appear the crowds that milled around any of the pioneer bath planes. All that has changed now. Little planes of accept different makes have been out in the field loar entants for the novely to wear off. The first fash of rethan sisten for emercation for its own sales has seemed. Not

cely the devices, but the percential retail concessers, buse bnd a change to look the markets over. Rose 64r Subsplace proces placed at the show by well-emblaced distributors should recrease our months available's many definitely found to exist Another moveley at least to important will make as first commercial how then worth. Her the feet time in the United States on autorers will be among the exhibits of ince, and exercise in the more fushion that they have a slave. The type has structed an immune amount of found automated. The Platform for American Basiness success, both from the public and from the accountries specialists, wherever it has been demonstrated. Now we

shall bears to see how that seterost erystalleses to commercial form, and to what extent the autopiro Soda customers arrong people who had never thought of thereselves so possible owners of arcraft The period is a particularly critical con. The fivening figures for the first two months of the year been been disspeciating, but it is too early as the surper for them to mean much. We shall really know where we stand and he able to draw definite conclusions a month from now. We shall leave a great deal daring the Decree Show about the relative accuracy of two selveds of opiness that have competed for favor in the volumes

On the one hand there have been those who believ

been simply a part of the general world-wide degrees. persuaded by the parties most directly interested. A son. They presume that with the return of a ball charpage directed as the ban operators by leading arise market the sirplace productor curve will return to the tion inservers should bring much product transc technics fine established from 1927 to 1929. The other group our needest before we shall have a successal reselvet and We have made our own position clear on a receiver of however carefully considered can be superpoted by facts. Within the next few mouths us shall know they dust recover, must be provided

whether or not the symbols market is come to come book in substantial parallel with the automobile starket Detroit by those who keep their eyes and ears open and who consider the show not as a convivial occasion but as

NEED BUSES

VISITOR from a printherine classe touring American aircorts would be likely to conclude ing pedestriaging. Airports otherwise first-class still lark administ around transportation facilities for siding natures. Some of them will lark approaches fit to be continued by scathing surery a categorities ranges. Mass of them offer so emily terroit for little whetever for the the establishment of transportation systems Even where a field is located directly on or year a milroud it re urusily impracticable to arrenge call service unless there he a direct co-operation with the milroad like that word during the burriags on the Post Office Appropriaof T. A. T. at Port Columbus Bus lines, however, meanly approach airports if they do not actually occurre out them on the kinbway. In any case the hores are small units which operate at firecount expressio and on enotes which are solvent to change without seem difficulty. Most of the country's large arrioris could be revolute across with a foreignst arbotale by carablished buy lines. The room changes or

overstorn per world have a substory effort in novelector. ine signate and sir trust and thus is heibling an traffic

to reary of our airports not now served. Even if there should be a temporary deficit in the operation, it would coverabl, and that fundamental changes are conded as I'm well worth the while of the arrors management to subsidize the service. Economy is a goost need of the crark that many thinkerton, that two years are second to bour, but there is no record for savene in making it diffecult for negote to reach an autoort already built and cocration. The theory that all retrons of aviation travel to their own automobiles is a pleasing one, but it does not aggars with the facts. Transcort facilities, even though

> TWO YEARS TO CO

HE Postsuster General has placed the air mil. so part of a general transport system for the carriage of passengers and goods, on trial for its life. With disconcerting abruptions, he and the assistant postmaster general directly in charge of the transportation of mail have informed the contractors of that fact. Still more disconcertizativ, the period of trial has been incorrespond mail service. The change comes as something of a blow then many of them, were being operated with the trace. To the six transaction operators and their management for it is ecurosly earlist months since the courses of the Waters Act, which operated to reduce the importer of most of the contractors who had been able to make any We have report been slow to express differences of painted with the Doe Office Department but in this in-

stunce our trouble is elegations in Washington. In fine in the beautiful Associated building which stock on Capitel Hill. To be specific, it has in the halls of The air good has its enemen. They because highly tion Bell and the refrequent debets on the floor of the House and the Scrate. There are members of Congress who think that the service has developed too rapidly: that it costs too much; that it is excessible cole as a ness' and in property that it has done the rhines that it rought not to have from and left undone the things that it could to have done and that there is no health in in-

We are confronted now with an investigation of the air mail service by a Congressional committee. Though make any roots extrassors or schedule changes unless it does not bear that name, it is likely to be an invent-

ration mane the less. It is no secret that the commutee in its immeries is point to find out that the air real service is here regrated at a beavy loss to the envergence What will be concluded from that remains in he soon a concentrated effort to develop to profilerer robbiunderstanding of the register. What we want is not a sentemental allegiance to the air small, but an approximate. in Congress and out, of the consume status of air transport, of why it is impossible to apply exectly the same refer to all lines, and of the lengths to which it may be necessary to carry the policy of government repport in order to develop and managin a preperly co-ordinated Numbers in the world, except possible on a few routes. where on sering transportation accessed existed, has sir premiore been independent of enveragent number

In the United States the success has been as einer, as to offer much more increasive to progress towards independ

States, unlike that in most other parts of the world respect, and the represent certain per suit of stuffin 1936 was less than half that in 1926. But none outley in said assessment In short, the position of air transport, and experiable of the sir real, is executably the contain of a great many other transportation enterprises and industries to their early days. Years of tarre-scale countries at a continue. our defect revolve merifices too heavy to expect private catifal to hear form executive when there is no assesssect of protection against the competition of newspeners in the field after the scale is turned. Government units save is the only resublify. It is seen more success for the aidines then it was for the radrouds. We firmly

believe that by the end of 1933, or at the very latest two venes thereafter, the air mad will be fully self-responme, which is more than it has ever been possible to aufor various other branches of the postal survice. The Protessore General probably has a similar step in mind when he talks of shorting down after two years more of trial. We think that he has made the period a little too. short, but we rely on a reasonably geogrous interpretatice, assuming that the results during the next two years. show continued progress. Congress does not need to look forward to a streetly recogning drain on the national anchorage to been the small fixing. Up to the occupant time the defect has been increasing because the service has been extending. We are inclined to think that absolute blok-water muck is

heavy marked charges the record foral way and that from this rive on there will be a standy reduction in the properties have the world be recollecte unfeateness of expedition. Formanately, there is little reason to fear that the reasonation by the portal subcommittee of the Henry Appropriations Committee will take un servicer of that color-

AND ME The trend of net cost is downward, but if it is to contime to, and if at the same time a proper service is to be maintained, it is indispensable that the estimates for the facal year 1983, which will be pressent within the ment few rewelve, should be treated in a progress sorrie by the Revenu of the Entiret and by Courses. Clear organizations which have inscred by emergence to value the six emil, and business men who would fact lost with. one its services, have the chance to make thereadless beard to Washington Some of them, in fact, are likely to be called better Representation Wood's committee It will be both surprising and beautable if the exception tion into the six most contracts facts to nine business leaders the opportunity of testifying to the value of air

med service in the mooth functioning of the affairs of

ency than in European countries. The record in Dated. I TAKE MINE FACE IN MINE INN

DUBLIC facilities on surports are quite as suppor test as 6,000-is runways to an aid to wisning musty public parrounge. Proper landscaping and provision of facilities for handling belieflay crowds belge materially; enablishment of first-class restaurants below a great deal. These things are being done seem and more widely on all large Assertion surports. But the dereference of hotel service has lagged senecountably Hotels or sun, with civilized distra-room facilities creasest surveilised possibilities for drawing the class of recage which serports and siritus most need. In Dange their number is straffly increasing. In Assertes. as least one such project, the Airport lass on Oakland resembled amport, has operated successfully for a nervel of save than a year and a half. The size has been to provide a botel and restaurant of birty country requiries no spelopes to the properal couldie, but to adore these facilities correctly to the survice of aircret personnel Then it is possible to provide a convenient home for firing students, pilots, and masoritaneous airment and errice attachis, and with the income four these asserts to maintain a really attractive beatelys for the accounaccretionation of towaresests and resources. Several expert botch are already beaut alasted to reseate on similar lates in other ments of the resource, but there are

The Oskland Airport Inn has been a powerful influence in drawing civic groups and poursissest citizens to the field for social functions and special occasions. The Shely natrons would be brought in direct contact with the services that we seek to sell them. The relations duren the existion business and the consess rabble would be consolidated. A few sudays Statlers Rose. ween, and Boldts would be very useful inst now.

News of the Month







Short Cut Opened for Traffic Scheduled service over the Rethmon-Justacemille coppil, which has been under construction by the Drustiment opened by Eastern Air Transport about April 1. Planes carrying tack par-sengers and and will be flows over in January on March A many Consolutant Commissions. The Sikneskys prevamely Med porndage on loar diverses the Pan American system totaled 14,782 in December, an increase of 22 ner even

orrect There was shown been

For Pass the Pan American Agreem

For 1930 the run American curveys system reported a read traffic races than lowr times that of 1929, and a passen-

ger traffic increased by 70 per cour. In 0,700,000 personager today Napery-eight sattered are so service on the fixer. The

boldow rooseer, the Aventon Corner

of \$305,071 for 1930, or 67 courts are

National Air Teresport speeded no near-rest service between New York

nd Chicago by transferring passagers

to and from trains at Lordale, Ohio, a

total present time

wriend Aggort, serving 2 be us the

About May I. Internation! Air Ex-About stay 5, internation our au-press place to impach 25-br, service between Detroit and Browneyille wa lit. The opening of Crothery Authors are comparator to with high frequency service at the lower periodalism. Control Likes area, originally scheduled menty bette been for March 9, has been portposed for a and dark university. opening of Georgy Airlines A recent consolidated resort of 15% regrestors of W.A.E., West Coast and Midcoeffung Ast Express showed a personner traffic increase of about 20 Western Arr's Des Fuhler F.STs over the preendage for July About 35 per cent of the December treffic was the Western Arris for February 1, 270 her forw. 2,576 her between May 1, 2930 and Jan 15, 1102, over the San Francisco Los Augster rope. One accounted for 1,250 kr., as average at 150 kr. per month. These tackness have over the Moses Carel Zone route and all but 1,750 lb. of the botal were carried but 1750 to ot the bittal serve currence by the Central American and Carrybeau not been in regular service users Dec 1 much read twee south to was departured was larger in December than as July The Mester-Sun juan combbound vol The Miner-Sun Jean comblemed vol-sitie sharmond 60 per cere in the na-words—a natable growth—while the other three corridon mercaned along 13

face come \$50.75 west and \$49.53 max.

poration plans opening April 1 a pas-senger server between Chicago and

Arrost, and respendent of the trans-

Addressed arrive projects have been

anglected department of air trans A neglected department of air trans-portation, air express, is beginning to get toke of the emphasis it deserves. of Treasundaneeral & Western Air to committee express patronage, the New Verk Philadelphia & Windowska air line apparated express service in co-cessable with the Western Union and on exchange founds necessity The Ledwigton line began corrying express on all at surveyed Peb 15. The rate between New York and The rate between New York and Washington in 21 for the first pround and 20.20 for each additional pound. Lubilty is larged to \$81, with an edifferent charge at the rote of \$8.30 for each \$100 valuation or fraction thereof on puckages valued in reserve of

Collections and deburrers are by

Western Usser, without sours sharpe A similar accommodation and using Western Union, has been provided by Colorad for more thus a year with warder programmyletype also ware Western Paritie Air Freighaus hause operating Feb. 24 hervees Oakland, Bern, Scioo, and Seazle. A transported Ford it flows over a circular rooms there belief a work, the reachest going from Oakland to Science, thereo to From perichables. Contracts for regular ship-ments been been glood with positive

British Line Opens

scheduled operation was started over the Importal Arranya reases some total 50,000 rm, and 2,145 m, will be added when the Muntan-Color Town arefun Amusicong-Whitworth Argentes are sed between London and the north med between Lendon and the north saus. A west'r schedule in each present with competings of Court wall Trend rates between temporals days Chies Mwante, five days London Carro, three days Carro-Karashi. The emplete Leader-Cape Town services will be flown in sleven days, a namen of us days one the best surface transport. her personnel a set of undorse and rink sanguin to rinkerste as, and sender to, those in the naval and purmilete summer emades of mechanism

argust runnigers, will be steerfed by reprint combustions of Man and while half-such shore brade. Special courses will mark the paint more than for you



anopeces locate in a projected express passenger service between London and france with Lockhend Vogas. Deside have not been reserved but the face have not been received, but me : Community Gire Endroon, wealthy Brit. and Louden recrusty in 1 for 12 min.— are average speed of 125 mayb., and a new street for that trip—promose a size in Excrepent feeder. These is no commercial plane leads in Excrepe uppreaching the Lockhard in neclinary

increased by 2,670 on March 3 when

all-metal memoplane, model 38-0. The built is 40 in long, the wave span 150 it. It is powered with two Happano-limits water-couled engages of 450 bymed, has an average craising meed of

AVIATION

all-metal encouplant, model 38-0. IES maph, and range with management Sold to Fire forces are you at possess concentrating on the International Aircraft Earthe. to be held on Detroit this month, do. ments and foreign sales are still being reported. The Antegyre Company of

now on a predoction basis. states that equittees for debrery of Actions the purchases of assignment of the United Scatte Navy, the Datrick News, Standard Od Company of New York, the Hariston Company of Willan-Barts, Fa., and John M. Miller, a pilor of the New York County Arrian. The the ferrost Parachette Company for en-finingenesse of Ployd Senth's patents of 1918-1919. A province decision in feare of the Karnell spherous had been con-Arred by the Delawate District Comm. York will be used the research were are tending lebelescent for gategyres. John M. Miller is to say his easy for gan-senger Fying. This will be the first time in the semester that as autumn. person by the Delaware Delawar Court. [Assertion, June 14, 1930.] This has now been overtheems by the Decemto his closure on many of the basic feet will be emplishe for you because by the Ammonocoment has been suide then new developments as the communication cights of property owners to compact percoi dugue the present year. The inter English type can be taken off in 30 yards, and has a top speed of 20 rsph. The Corva system was super-

mentally adapted to scaptures last summentally adopted to semigate her num-ner and the fest result has been an order by the French government for two smogyto float angleses fitted with Remed organic for service with the French fest to recommissions that of remphat when Pedroi Judge Woodwagh deceded a favorable worther Woodcough decemed a favorable surmer for the Booling Ast Transport Company to he action ordered to recover damages by the Nebusika Salest Post Farm, it An important sides meeting was staged by Cartine-Wright as 34. Leave. droug the last two septes of February.
About 300 Scalers visited the St. Lauts the new place models, and managing. The large increase is the new of radio exponent in alternit operations in responsible for a statement by the West-

by the Natoura never you rare, or having been alleged that the mean of the pinner so Eighteand the mother from this shay destroyed their young been disposed of by the United States Superme Court is a decision handed forewn at Perio in 1959, to a down by Justice Highest on the day constrain are new parties. Informed the collaboration of his estudied. A loss removement consisten em Electric Company Production of green's radio arts in 1932 fermant at \$400,000, resulted \$500,000 at the end the National Motor Vehicle Their Act. The programs was a reversal of a one William McSoyle had recently bean

Although less year was virtually the one William McBuyle had receptly been force as which the Western Electric restorated to these years in prices and Company had done harmon in the a \$2,000 has been resulting a pince and writibles field with communication up temporting it norms the than here parame, it found out to greated restorate [Artustens, Sagt. 30, 1950]. Unless

Wercester Airport case eventues was a partial vectory. In the Circuland Cortes

hisport man of lest manner is serviced a shattering defeat. In a recent case is Onaha servicestical interests cases of Onaha servicestical interests desired manufact when Federal Indeed

Ever personne in the development, and \$25 transport planes with its copies is peopless or typing beat militable root. In political, coronary radio lates for adording operations across Acro-plone receivers were nextual on

Arietion Goes to Cours A committee of foresteen receibers of

recessly called on President Flourer to recent to the chief carrying a dende report of the conditions employ with the industry at the present time. Mr. Lawrence told the Potendent that area Lawrence feld the Frenchise that grea-tion had possed through the resident-ment period of last year and was now red of many determent factors and in a position to be repidly developed along progression base. the next few works have been seene tunally production of important legal decreases and impalative developments. reversal of decision as the parachers patron binguison of the Irving Airthura corporer and the Florel South Arrival

starting formed at paints toward transport recently taken in or a or Ampelon programs while the milfairly to the advance, the time algain in the low is amended aircraft thath state law, and weber the state where Senera Barifia

which coulded you of black for

presty commontal breatrage from

Opposition among recent develop

Optomorag among receive arrange ments affecting the legal position of arrests in the cartification of the Dan Arminate Arr Navigation Convention of the Pas-Assemble Arr Navigation Convention of 1928 by the United States Security, which then taken on Pub. 32. Admin every than two years of delay in sub-Donal States and other management personne of free serial traverse of each tive has only a limited agrarifactor, for only Parama, Meajor, Gostovada, and Negrator, in softhus to the United States have select satisfic. Dilar retifeedings are likely in the pear femous at some generaliseds welled on the action of the Upsted States before taken their own decrees. In general the Past drawn at Pero in 1919, to which 2

following the calabitation of his minutells. A less complement sensorial action leveling. It was held by the court that his one having very definite algorithms. initiality. In was held by the court due to me strying very options again to me strying to the first previous of the first approval America's share of the expenses at International Technical Commission Involved Aerical Reports America of finelly opposeds to suff and proving to sinteling in the body whigh decome is self to the study of arrial private law and to working known the reconcilia-



no of the first commercial antegers has been delivered to the transit forces

States Consider die Loses own boundaries, local few ensiring bodies bern been series. In 32 of the 48 states her have recently been considering of direct nerotopical paterns. A

specific recognificaments. Arkennas ha

created a division of the state leghwan

raised from a guidate tax or all bet scheduled flying. This distinction be-

regulatory students of any load,

yeary will be president set. YearDunce ville-president of in well as of the simplane Mr. Loon Chernolet was

dest and peneral manager

he seed by Prince Jean Mater Chies in an allessee to break the greens

he has distance record by a flight Budspeel to Cape Town.

has been

versed air.

product.

has been reliased by the National Air Race bendparture, Combant. In gen-stal, the events defer little from those of last year. Excels there are those of light year. Evenly, there are three decision and 40 maning enters and the manin parameters and dead stack inching country. The Carlo Berly will be spen to been men and wessess pelects and will be flown from some Western only in Covedand. The man's Devly, a created a diversion of the state legislary department to account in the development of sirports and services. Part of the secondary of the new discontinuous will be bardens affair, will amount over from he women's Derty, also handson, we schoduled from This distinction infollow the man roase. Of the total 40 racing events, 27 are for men code, 7 for women code, 2 for military planes only There is see maned racing count. The one endrsty new even which appears to the program is the subspace race, for man place only, five har over a 10-ms course for prime

Alabams is preparing an aventure code. Orapon has recently exacted as are in prevent for the establishment of course provide for the establishment or com-poncy fields along the public beaches of that state, a measure of particular antotaling \$1,000. There is bath seven this month on the sign. On March 30 Herebrow the black ribbon and theo for sign year—
the following Trophy Copper. Touch why it to capacitate of the form alortance where the county area to an are reported to be training and race completes in being grouned. Talk of Merch of the Changle Lauret Convertion, Baltimore, Md. a sale American porterpation in the event has empression, garred the fact that under the rules the

> Dec. 31 A charter of managements but been issued to Al Welliams, Inc., a new company presumed to be desired

Three Share

Posture Arietica Two sir shows to Latin Assertions countries compare with the militaria event at Derror for action. A British exposition in new being held in Examp Area. The cay of Meeses will put on its show in May.

The first august Meesess Interna-tional Avevanetted Expedition to to be beld at Gental Airpart, Meetes City, May 1-10 impleme. The expedition will recipitate and present indus-rial exponence, and a same of vaces. Performance and a same of vaces.

he Resch Artrick Corporation Develop, Cal. has been granted as mints from England, France, Italy and covered near-place cable monoclasse Operations at the plant have event is spensored by the Mences erantes, staged by the Mengen gon-erantes, staged by the Asto Oak of Mexico. A setupple American commithom special up, and recent was again-from stelled J. L. Cam, production manager; Genedl F. Vicher, formelly chief engineer with Lackbook, chief traymer; Roper Q. Williams, train-Agencie Ster of 2020, class plot; and ter, bended by William E. Arthur, has been incomed to supervise all American Alies Miler, demoustrance company also assessed in has delivered to Economics a long distance machine in

Air Tour Rented

That well-known flying "show," the heard of discours, and Thomas S. Do That wen-move Bying "show, use National Air Tear, it to start from Detroit on July 4 and to penetrate bleakes on far as Microso City, assessed.

ing to the tentaging Historyers. Thus the Teer Councilies meets the reggestions, advanced from a number of quarters, thet the tour should be sent rose Later America for a rates demonstration. The America for a man compositioners, a me reset in abprove at five right.

James 18. Dopinels of the Shelt Cal Geograpy will release. Licentenanc Do-finite, Edward P. Warner, editor of Artannas, Carl F. Sebery, my William technical communities on the Year. The formeds of the Tear is to recent as in formula of the True is to remain as in 1930, but the general rules of operation have been the subject of further me-tablishms in Detroit and it a reseller representatives of the industry and Sent notable making has been done in the New York City area in weeks, Wallram Hards and AFER IN COLUM Means of the Souther-March O'Means of the Boudan-Harth Institute of Sources made three flights at the school's Warwick, N. V., treasing camp of more than 4-by, showing each, On modiler occasion O'Mean was place-greed to about 3,500 ft above the city and count for about 35

AVIATION

April, 1911

lessed for special traffic arrangements FA1 are make no exceptions, and are Personnel Shifts

sein to the thousty of huso Brodge. On Mar-

A number of summaries have to All a recent meeting of the based of descenses of the United Aircraft & I Tamponia Compression, E. E. Wilson Verylla Compression, E. E. Wilson Verylla Compression of the Chemo Verylla Compression of the Chemo bedding company. Mr. Wilson, success-ling, F. B. EctraChitz, who incomes-ting in the Chemother of the Chemother children of the beauty of the children of the beauty of the

good the presidency of the Hamilton Standard Propeller Copporation. He is also president at the Shorsky Avance. Corporation.
At the named meeting of Acco Under-writers Conjectation and subsidiary com-posites. Elements Barber roughed has profitten as precedent and became shall-man at the band. Googy L. Liopi, former fast vice president of the conpoly, was rivered president of the cou-paly, was rivered president of the Asro-Underwriters Coppension, and the cor-permiss's subsidiaries Asro Indonesis permiss's substitutes Aero Indonesay Corporation, Surber & Sudden, Inc., and Aero Empressing & Advancy Serv-ice, Inc. A. H. Boome was appeared president of Asre Issurance Company Oneger have been made in the energy Output first tota made is the energies perioseed of North American Ava-tion, Inc. C. M. Keys has been ap-pointed chairmen of the board, Thomas A. Morpes, president of Sperry Gyre-scope, Inc., in the new president, J. Cherent Corolla visco-thairmen of the

first vice president of the corporation

Asterolt Corporation of Fortland, Ore,

AVIATION

1981 Particular All Toron UNITED STATES

luid in Pebruary, Junes H. Lynch, fervier executive vigo-prelicust of the company, was elected to the presidency. The Boring Airphane Company has sid in February, James H. Lynch, militas on appropriations had structed in recor executive visco-possibilitat of the they Will a regulation that the regions, was elected to the presidency. Navy Department should make no The Desing Airphana Company has larger terraness in the quarter of presenting the approximated of James D. efforts above the mask of fine-possi-positional that approximate of James D. Morror, Westbegere representative, as transmission of the company of the previous are arrested story for the previous are arrested story for the previous are arrested story for the part of the previous are arrested story for the previous are arrested story for the previous are arrested story for the previous arrested story of the previous arrested story of the previous arrested arrested

Southwestern distributes for the all-metal fore-wing Nursbeing Mosephare. Edward Hurbow in new general manager and vice-president of the Sparten Aircraft Company, of Tube. Unofficial report from Washington in Unofficial report from Wassington in to the effect that the command of the new News attalky Akron, new sources completion at the Goodyna plant, Akron. Oles, will be given to Licet-Con-marker C. E. Rosendahl, firmer con-

mander of the Lie Angeles. present time Community Recordable is in present time Communities Recordable in in-charge of Navy Egitan-than are training. Gainge L. Stock has recogned as pros-riest of Aere Supply Manufacturing Company and his been succeeded by Prends N. Ames. Montion was made in last soundly

More Financial The best finencial news of the numb-again comes from the manufacturers of Attends Company, which populy ashas declared as name devidend of \$0.27 has declared as name devidend of \$0.25 a share payment of the popular name and devidend of \$0.25 a share payment of the popular of as 340,000 to be payment to the Geometria. The Geom L. shares contranding.

ress of over

bet meeme thering the past year, ,011,110,75 as square \$1,647,440 or the stock bookings of the scope which are heavy or Curtice V

commander, assigned to existing days he not asset value per charr on Jan.

General Asiation Burn W. A. E. Stock

Major control movement of the period was the argumenton of 24 per ones of the contributing stock of Western Air

cost of its extrange among the active executive staff on the protest of a specification that sufficient matter of the

bound of fraction was neclearly from the bound of fraction was neclearly from the in 45 m she summed mercing March 21 Nectoral Avisions Corporation re-ported a not consudebased defect of \$1,977,070 for the part, showing a set that Yulius of \$800 per share as of law. I April, the value of the holding lead 1. Again, no vance of the bounds of recovered sufficiently to seprent an separation value of \$6.50 on Jan. II.

The Consublated Airrard Corpora-tion made roles of \$4,345,171 during the paid, almost everly drifted between government and commercial bestween

he net improve after tween was \$127.001

North America Avision and Avision of the 1932 statement, During the

holding company to that of one prin-

cipally cargaged in operations under its own control. The four must which it own control, the Sperry Gyroscope

company, Eastern Air Transport Inc. Ford Instrument Company Inc., and the B/J Amerale Corporation, have carred

part year the aspect of the corp

cents per share of stock cent

Nag. American Aviation has also

2930, was \$11.54

At a result of this transaction, representatives of General Adultion

of Datron, and J. M. Schommater, New York City, T. W. Streeter,

Canadian Combine Hen Good Year

American Giron Creporation following a receiver's sale of some. Sale was made to a group of Chicago because non-banded by Lee Hammond. Invan-tory methods 30 consider Giron re-

gives, and ports for about 300 more. Sale series was \$185,000. Following

reorganization the plant has recom-menced activities with W. H. Discolarie

berner secretary treasure of the com-

min at more set on the engines, the un-

he later concers has taken over

persists a relate and corres openances

Airport construction and improve-ment work in occurance with the adverse of spring. Descinating haspar peop-nels metade. A \$25.000 structure at Servaments Cel. Manacinel Airport; at \$20x100.00; hangur at Sun Percenters for people of Landweigh Field. Sen Dangu-ter Bandle.

Parelle Air Transport, and a helle-fr, hangur at the International

import, Nogules, Aria.

At lest a restorment for the Newark Airport. Following much agresses new a long period, a con-story brick building course \$30,000 in to be second building coiting \$30,000 is to be errested on piles abroady driven at the port. It measures 49,000 ft. sed will be at Seemah design. The Auro Food Conse-It its first award report, Causdian Assways, Ltd., formed by marger of fire retion will occupy it. Newark has not Catadan companies serly in 1920, sy-vested net operating revenue of \$1,817, 543 and a net long after all charges, recluding depressions, of \$60,700. A drop in traffic with the custainment of completed also, a new two-stace been building to become the small and Worther erens forces. Ground was broken reposits at Missis for a \$650,000 seaplane base of 33 serve the larger. The company's units curried started at one on the first of ten-\$35,000 begger measuring 140 it square. The 100 room Ford Arrors Ing. one capress, and 5,000 paymengers Planes were flown 1,900 000 mit charing the year Total assets were \$1,111,660 at the and of 200. to be opened in Jone under manage-ment of the L. G. Treatury Service Of note in the reorganization of the American Circus Corporation (allowers



Name Studies

The new Assistance are designated the section of th Air Trumpert, as ver-president of the latter energy, and Equal Contralate as general experiencement of operations

AVIATION

there of manager currence \$511.71 Strenger Sying method the operators use at once set on the enguise, use ep-right Girne new bring synthis at \$700 and the Hi-Daire at \$200 On the embange hards of face shares of Freedold Avanous Cooperation stock for two of The Avanous Cooperation, serious of the Aeronautical Channes on Commerce was pulling fined touches to its program for the Third National Air-port Conference at Tubes, March 25-27. A fell report will be included as May

At this goes to press, the ampert serious of the Aeronautical Chamber of Oakland Gets Retine

rite months unding Dec

mesens for this period was \$25,541.06

come was discoluted in past as follows

melede the Tearcheld Aerial Corners Corporation, Parechelt Aerial Surveys med Avance Corporation of Canada). The KR 21 model will be leak at Hapventown, Mrt. and the 71 Model as Past Construction

Dakbard Airport is the 61th to re-Children Alphant is the fifth to re-retire the ALA success greated by the Author Section, Accounting Treach The first jour were Postiar Messaged Agent, Dever Municipal Airport, Rickenhades Airport at Suna Car. In. and the Brownerster Municipal Assessed Lighting of the Smithe Toronto Port-land-Synhore - Peres - Braze - Salt Lake City Alexany has been completed. Inschols 92 resideing beacons of 2,000, 000 cp each, 14 acceptess blasker bytes, and 28 represent lander fields. The and 28 revergency lending from . Inc. most difficult portion of the work wen-the intelligence of red and green rido fights along the Columbia River muses.

technical development through research the Navy Suress of Aeronastics of on since has October unto the oversease of passenger compartments of its plane.
Co-operating with the Navy Bussus of Medicine and Suspery a server of terms are to the Medicine and Suspery as server of terms. pilots after 6-br flights in practicely every type of plane operated by the Nave in colv two many did the tens Other the effects of exposable unhalation

Samples of the ordinate below the breaking better that are the collected from all legitime best and in second more cases postary amounts of the eas were

tends changes. Work to the going specifying that the Dary interve de-formed on its excession to re-many specifying that the Dary interve de-on the planet destood which will also seems to the delivery and prefitting the seems of the property of the first. with the post wigners there is any trute of the moneyale.

From National Air Transport comes the report than a two-accust truly of cabber wing those to anothe top Sprea-Propert for tion will be carried out on its New York to Chrestand run. The shoe is a new development by the N. A. C. A. Akron Launchine Meanwhile in Alers the completion of the 285-4 is rapidly approaching. The terms date of delivery and branch.

Airship Effectionmen

The recent participation of the Los Attended on the reveal represents and Persona nature to have conducted an defeate requesty decision one way or smocher in the minds of the arrest anaber-

Sortic, has perfected plans for the polar-sig and general measurement of the cu-pocial crowds of speciators. The servergements unclude a force around the servors 4 at its fourth and a remed in war-time operations. Leaving Lakeof 200 men as it will be highly unportion to have the field entirely clear when the skip is polled from the hanner they completed a highly satisfactory true with Commissions Color to the trip via Chanasanno, Cuba, to the troder Parolin austraved on the Pacelle. After a member of local flights, a officially obsered the suscentres as a Care abe carried and assignments in course in which to come week were On the therd day contact was rande with the attacking floor cultures after her radius had been post reporting that fact, the ules was "abor person of once against to marter per-rented any definite secon before ad-personness. The hill must therefore Chicago many of the carloss compearmonent. The bill must therefore come up answer in December.

From Germany came De, Edmare en a recent wird po consult selfs (packpear-Zespehn officials, While hers in discission) officials, While hers in discission office of flather in April and Bay at the Dreft Zespehn to Europe surplup can be nighted as seen as it can right newton venoch. The main body of the stracking feet had already been

pended to metace cents cucrying nuand Spain and for later in the resonance a Chained the friends of the austige-Wren the first two days' requires re-odes were of great value. The Los -04 sir well. th sir year. Port of the dishood R-101 will by igue, bet under German numerer an eart of the new German daughte: the Zennella, works, house the matel inprevented by the terms of its delivery from carrying armament or defending makes of the British analog for remeli-A new type much as the ZECLA woold mover have been sighted by an ower became the actual contact weight have been made by the fire planes with which it will be coppied. The man new tree would have bed the determiof an planes and many reachine persons with its higher speed would have been groundly less volumethin."

by the Goodyner-Zeopell's company at any time of the own role, of it so use fit.

bowever to await the launching and per

French Air Status It is pointed out at the Navy Eurene It is pointed out at the Nary Enteres of Aeronardics that the appropriations for the present year satisfact on term of \$100,000 for work on the \$28.5°, and that the Navy Appropriation led for \$932 constitutes a previous of \$1,000,000 for the same purpose. Februaries of parts for the second thin two the same parts for the second thin two two parts for the second thin two two parts for the second thin two parts Following the most recess upheaval of the French Califort, M. Jacques-Legin Demostit, who served a form as

of three fights to South America ing and fashinging entr parts.

A 30-hr see fight was maconspile made recently on a new paral dirigible Judy angles (section becomes

doubt that it will be in the hands of the Navy by the models of the number.

Already work has commenced on the

The budget is distributed, re per o in malitary eviation; 14 per cost communical griadium, 10 per cost by the portable such mast to which it Inconductive also was the effect to get feverable section from the late Con-gress on the McNary-Parker bill, which The houses were featured The hearings were learners on challenges concerning optimize beau-rens relations between Places Exercise green on the McNary-Parker int, much provides mechanism by which the Post Office Department can contract with commercial alrelian frace for the transference at Washington, and the Aeropeacarried on, at one time received accorde

tide company while he was serving as

Innkers Builds

Carron Plane

den, her accepted the new past of In-

struck a may last receds. A proposed new subsidy arrangement with Cou-

perso Generale Astroposide, operator of the air small line to South America, was guested March 6 by the Chamber of

Depoise. As the same time the Au-

com. housest, for renewed negotiation

open, himselve, for reserved negotiations regarding Assopoutable's Seasons. Al-leged to be virtually hashings; it was previded by government deriver with \$220,000 to meet immediate gencyprocion.

On the same day the Chamber adopted the Air Memotry's common of \$90,000, 000 for the 1621 badget, as mercent of

\$7,000,000 over the amount for last year. The badget is distributed. 76 not com-

Socialistic for transportation of air Specificary for transportation in an experim in large quantities, the Justices, the JU-52, intule engined managing of more or with a mecons transage account of a share 6,600 fb. of freight. It is postuped with a it is V. VII water-cooled engine of 600 hy and has a crusting apost of about 100 mg.h. The express compan-Neethie armong new Europeux designs of the meeth is a British single-master

of the mouth in a British idegle-maker lighter, the Glovier S S 19. In addition to the first game, two meaning in growing in the timelings and a pair on the land-ing edge of each wing contains the proing other or each wang compute our pro-peller are, the mechine currier racin for four 20-to bombs. Personal with a superchanged first purpose of 400 by, it is credited with reaching 15,000 ft. on 0 men, manufacturing 194 m.ph. speed

and 190 mark, at 10,000 ft. It has a metal feedage, is equipped with a Town and other and in another of the Teres

of June 1 to New Agreed Marine of the Park of the Control of the C

Perfectively Demand from Grant of Manufactures



dent, 1911











ce the other hand continues confined within carryon facility. The latest total in easy shighely shows that of her Sup-

Page 150 Presuper Speration and Fund Plying O'N the curve, "Passengers Curvint," the figure for 2000 represents only the first time months of the pear. The

final report for the year has not yet been November and December have been received, making it penable to ging rer-rected octals for 1900. The estimates for these months were so accurate that the whole service. Though most of the rooms totals ere changed slightly those for the newly established trans-our-

Pitts includes friction of U.S. and. tion. The miles actually flows on the Marta-Loe Augeles and the New York

FIRST MINE. Los Amprius poster were 2 and 5 per ures given in the statistical issue. Re-turns for the Chicago Dallan route were

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Character Assert Abstract Atlanta in

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second class, page, where 114.143 H

Specification Table Gires L. Hartin 2-819 magine

y man been brought to our other Then that the specifications given her the Gless L. Martin Blotters Company D-335 engine in Table IV "Asserting Degree Specifications" of the March 1921 true of Aryanov should be

revised to read as follows From criticity, Strikes, Serverted adventures property drives, direct personal rates have Printed Carlo, S.A. L. Charlespoors, 502 of the tricks arrest, 824 in learn crowd, see in per les est communition, Juli in our an incident describe enterester, Braille desse designe station, S.A.N. Standard States per

has following description and use feature covering the "Alpha specifications published in Arraging

Tree Coulfishe No DEL poles at Sectory E. Power Phone made of statute Park with C. brief rated homespaces (200 a gain of rated homespaces 2,000 but opposity in pulsars, but opposity to pulsars, M. Western way busines, and in your last on the second leading, 10 % is not be under the control of the part of the control of orders, 4,000 to.

IF Performance Sigh speed, 100 majo,
containing speed, 300 majo, 7 p.m. of smelling
speed, 1 800 offices at one bread, 1,000 fb, per
man, service celling \$4,000 fb, performance, service celling \$4,000 fb, performance, 3 TE Africe (m.St.): wine, 500, oliven, 5 h, 5.6; roller, 7.0; matches, 67, oliven

THE LANGING SHAPE STOPE AND MADE burder, where whereher the same and IX Fundam framework, "Aldad" rivered presents, 28 m./L.
The developments for the "Links." as a supplies size the eras these gives there are the size of the size of

Statut Persons (Fee: 201) Francis and Street applications course during the last three of 1929 and 1930. In 1931. over below that of the preceding year. The current humanc of place increases continued from 20 to 30 per cent below the figures for the two per-centing petry until Prelowary. Then both

typical of this secons of the year The effect of the 20,000 has on the

then 300; held from and absorptiones.

for service is remarkable. for service as remorkable. Once as the part ste mouths that good was went and lest, bee other a year attempt to repeat the achievement the currer revened and described, as it continues to do

25. New Orleans House, M. How York Low Assessed

Total comments and a com-*Beatled Crates 1990. + Countries von C.A.M. S. July L. 1999

Ft. College Programmellin.

IS MIRANT MATTER TO

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Corner Ameri Patrolish Airplant Mig. Corporation Paintel Service Nic Commer Olma L. Morah Motors Company Kinter Airphan & Motor Composition Comming Manufacturing Company Medicate American Company Medicate American Company Provide Advant Corporation Sepretty Sentage A-Charme Prett & Wildram Allereds Company Capalle Aire Card Starter Astronomical Com-VA-Perket Airwa Water Abreat Copposition --- Test Astronomical Sudantry Agent Supply State open

Santonia Abradi Committee from Attended Composition Should published Composition State Street Corporate States About Company Disease About Corporation Free Engineering Enterptories, Ser. 2434-G Paylor Brothes Atlanta C Ventile Atlanta Company

Enform Almer's Corporate

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Vising Plots have Company The Water Street Company Wast Proof Advanced Corner Value (tal Advance, San -

HR National Aircraft the American servingstical year Comme to It does during the second week or April at might well be considered the opening of "the portant as a morting place for the industry this weer's

scheduled exhibits. The show directory faces Detent show, the raily one of major disserstons scheduled for 1931, should take on more than ever before the aspects of a cheptay of really new engagement. At lines in the most long years the day olar halls have been promotenously filled with models of treated but familiar worth stunded phases in solar-field

proven our tenuence worth, standard peaces in approach colors but more the less without news value. This year's softshire should be remarkably fresh. At no time on the cost decade has each a situation been revated which an thoroughly tests the old principle that when sales and production fall off orgineering development flourishes. One compliar thought will always be that a fere plant depression produces a good sir show Possibly it is One does not pred be prophetic to say, even as this is written that the results at the Partout show will resued

the subserve tendency toward held siredays. A shore at the searce led will declose that approximately one-half of the M craft now entered will come upday that you, accoming builts manuared by as many accoming states.

HLMF-00

1931

The Detroit Show coming in the water of a major business deurearies, where engineer ing takent relieved of production pressure

smane the most exectnesies create on the

accompation) become for 1931. The author

analyses trends in design as indicated by the

will be used later There is little ques this page, and a program of events follows told my some strikes condition in which the substry has suffered for some than a year. The Detroit show will find the industry once pairs on an un-grade following the most desertous business delicrors of its history. It is also of the industry's best selling sesson

The National Aircraft Show, which as being sponsored wants by the Aeronautical Chamber of Commerce, Inc. will be held in the manurer \$1,000,000 hunger on De trust City Airport, as was the Detroit show last year, and 2 will extend from April 11 to 19, nefeative Ray Cooper, manager of the Amerali Bureau, will be the resource as for several years rest At the writer the show's entry hat privates a resof 95 suplemen entered by 50 manufacturers and 100

Cultural No. Physic Assertation





BROWN

available floor was sold within a few works after the speciment blanks were mailed out. This is a condition

without parallel in American accraft show experience. The test will be 270 it, bur and 120 it wide, affective

places, new and old, will be seen upon the arroset that

year than was the case last year, during which tiese the

street swened LOD take offs date. Are traffe non-

time, probably will be developed along the leses employed.

last year. That is: (1) all traffic will be counter-clock-

wise: (2) a circle of at least 180 dec. must be excite

before promping into the line of traffic preparing to land;

(3) takent's will be made only from a point designated by (3) timestry will be made only from a point designated by the starter, and only at the starter's rayual; (4) an arro-

heres will be personed over the airport; and (5) plants

taking off must clear the surport boundaries before mak-

our the first name, which must be to the left. Stati. soon

or digiting-turn takents will be reported as acrobation

wedges, will be available on city-owned property and

mattack the surport feare. Perform stone for married

matrix 500 cars cover by rabilators and show much

Free narrow store for an enformed number of more

langes on the airport, although not drawn up at the

an additional 30,000 to ft.

will be reserved within the

ate by manuscrating special

fares test five order from

descriptions Detaut. The varia-

cea exhibitors' spaces will be

ight our alone sistes or "sur-

ways" bearing the names of

OF THE DETROIT SHOW

ROM the plans of the group of exhibitors at the Detroit Ageraft Show it is countile to rices some improvince of the ideas of the manufacturers, if not of Of prime importance is the indication that the light sirplane has scaned to be a curiotity and become an

tion as to whether it is to be a one-place or a two-place marking. Although several resource light plane groups. facturers are added two place machines to their lines they are sail occasioning to consistant are the single-place In new event, the light-plane movement seems to have cross of sirchests of three and four masterers respects This is a very recent development abov plans men to show a large proportion of another cabin biologue, undication a possible prevent of the true It is difficult to discuss detail improvements in advance of the show, but industries are that many references

have been made with the idea of semplified emintenance

Experience the trend of the light ampline from Corporation and the Assumptional Corporation of course. The two class Eastet is cowered by the 30 ha Seriety engine, while the two consenger Acronos, known er the Depick C-3, is a sade-by-sade machine, powered with the Account E-113 marine of 35 ha. Both sirelanes are sender in general design characteristics to their por-distriction. The Assessment of Corneration of Assessment will also exhibit the DeLuce C-2 Aerones, which is a new Several release modifications have been made in the "Provider" Series 2 amphibion, under production be

une. Substitution of a small encourage ter 20 to x 3 to

Manufacturers throughout the industry are counsed actively at the present time in adding Snishing teaches to new models of strolunes series and materials for display at the Decade Alcoraft Show. In want cases about have been made well in advance but a few arbibitum are absent executain about finishing their still others have been late in applying for more and more not be accommodated. Considering these elementances we are attacent. for to present the plans for the show as soon

rately as possible in advance of the opening. for the solid rubber and bakable tail wheel with soring errorgement has been made, eliminating the slating dues on the water. Invidentally, the large wheel also has a certain rudder effect in the water Four surplaces, uncluding the single engined Coulome. powered Author will be shown by the Bellanes Agreest programme. Although the Airless has been seen on remoter of fields during the past year, it has sever before

hour exhibited at a manor second; show. The streetest and the same model fitted as a special photographic airplace will be included in the exhibit machine is the accolace. Wast-powered Skyrocket A very marresting exhibit has been planned by the Bard Arrenalt Company, which has been devoting its efforts to relatively low powered but efficient biologies having good production characteristics. In addition to the lambles three-place model, powered with the 100 ho famour regime, the new fear-place highest powered with the 125 hp. Kinner will be shown. The feature of the solubit will be a few-class calen biclass, movemi with Amobiliares. Inc., since it was described in a recent tenur the 125 by Kinner and telling for \$4,995. This markete of Aviation. Chief among them is an improvement

the form of an niriod nection, from which a certain assume of life is expected. To inclining production, the

view toward capitalizing on the private-owner, acuteur plot market, certain of the industry have respectated during the past year upon producing sirplants of this This trend will be exceptibled at the show by main offerings at the American Rapiet, the Bold Rell Posthe Rearway Midger, the Contino-Wright Sprior, the throw Heath models the two Associate the Assibal the fater national Arrow Head, the Taylor Cab, and others. Al. though susweign beaver than those part hand, others the Driver Skylark, the three Great Lake models the two Bird models, the two Nicholas-Bezziev entries, the action-Wright Coupe, the Amphibon Privators, the consistent Piect, the Franklin, the Mercury, the two Mona Aircraft entries. the Source Aircraft entry the Swanner entry, the States model, the Westbrook retry the Yellow Cab entry, and the three Wato models. It to got library that the show will contain acarbine become than the Folder F-32, although the Ford Monor Com-

pany may stage a surprise at the last grangle, A consour manufacturers have generated a number of surprises in their field, which will make that branch of the show a decidefly interesting companies of the whole all showing the latest models of their product. They solude American Cirras, Martin, Continental, Lyney, Warner, Sockely, and Weiete. As this is written at seems blody that the above week. will be declared Aviation Week by an official coveleys. toos from Mayor Frank Murphy, of Detroit, and that the

tain classes of persons who Highlights of the Program Foreday, April 14, between 190pm Importer of store by board of 2 and 4 nm. Other execu-100 and columns of records for bedeen are and pro-Heistenson subremation. Air

of the program are as shown The National Aircraft Show is being arranged for by a Board of Courtral of four men representing both the Assumatical Charles and the Aircraft Bureau of the Detroit Board Edward Ersen, president of the is chairme, and John R. Carefey of the Bayer Asia tion Composition, Searth Hend, Ind., wire chairman; Col. Phil. G. Komp, of Chi-cura, and G. Hall Reserves. of Derret, the two reman-

ing members

dean of the week will be

descripted in bener of ore-

rations will be done in velmore, Fued Parker low and green, the official Charles Age 10 15 M a.m. - Brend Assend Continues on Assen-menting Schooling, Siral Studies 8.10, 850 p.m. - Operation controlling, Ad Vinna-pell Breite, Assensation Chandre of Commun. New models of restablished designs and the introduction of new planes, more of H.H.s.s.-Frank's consists of Assessthen of decidedly radical Militariah serian Assessment Chanter of Con-mores, Band State 199 a.m. Chief Spreadurin at physic design, will be high points of the Detroit slow. The (Today, April 14) modest surplace well bold a place such as it has never Series of Automotive Engineer, "Engine, and Series" Fasts Station Trade held in any aircraft show 19 a.m. - Person Appellion Electric hill the Steam and States County Section

AAME, 'Influence of France Conduction Conserved At Transport" Lodg Chon.

Character, April 10 nm. and p.m.—Political seconds: meeting of +5 A. R. "Assolithing and freedom, Alexander algo, Alexander," Book-Chattle, Engal.

Personal April 10

THE RESIDENCE OF STREET

264 wings of all three models employ the same purels, which Dolphus is described in some detail in this lower. One of the reset interesting of the new light planes from a production standpoint is the Buhl "Bull Per," a single-place open and water manufalane removed by the these-extender Sarkety engine. This markups embodies the use of a moreocopic all-metal fuselage, the first of its kind to the light place group, and offers samefrage production possibilities. It is described briefly on page 240 of this mage. A megle engine entire monoplace will

Moviel 17 colyn monoplane, the latest design of Plant biolose, and a new three-piace machine, The estire new line for 1931 of the Custim-Weight Airplane Company will be exhibited. The group incloses the lunior, powered by the Sudady engine the Gypey-powered Coope, and Travelair sport trasper, all of which have been described in this and possious seases of Avvarion The other sirplanes for display in this group are the Curtiss-Wright Seden, four-place blatt wine monoplass, with the Cortiss Challenger suggest the Translate six place cabin monoclane; the Carlles Kenn. bird and the Keystone Conventer. Haterical interest and mechanical denit will chance teries the presentation of the Wright Asconastical Conponution Division. The hunorical aspect will fie in the disease of we-cooled engines from the removalenter Lawrence through the Whirlword J-4 engine used by Community Bard to the very latest make of Contrar R-1750-F. This most report Would needed, which embedge copy references sactating a new spork plan sectionalised form. These detailed improvements will sichalitated term. Incide detained amplicements was also be decemberated reparately. A disease Cyclone Model 1820 cratic will complete the preparation as spoled to the Cyclone type. A 3-6 size extender course. modeled to the E type and sectionalized and a 700-D engine converted to the E type will be included. In with,

gear, and the amplifuon version of the Easterna flower boat. One model previously assessment as to be included. tion sate the corn philoso is to be seen the Dolohan, it has a Constitution, in past a of six to right sersome and is powered per Ware enries. recented above the wing. It is char-acterized by a rein

wing purface, placed

sectionalised will complete the exhibit.

A number of modifications have been made in the 1957 model Skylark, to be exhibited by the Driven Aircraft Corporation. A endement your consoletely combine the cague and contributing both to accourance and accourance swarzie efficiency has been incorporated, a mensalie tall stod is furnished as sandard exceptions and the happage compartment has been recycl from the year to a consequenforward of the fenat coveral A high-wing monophism, having a parsenger esquenty

he displayed by the Breeze Aircraft Company. The Conof two persons, and powered with the Roses owing will solidated Arrereft Corporation will abow a Fleeteter be exhibited by the Farechild Aventian Corporation The enables in the most recess product of the Kreider Remore division of the Passeight organization, and will Probable the only ambulance plane on display will be that shown by the Folder Aircraft Corporation, Division of General Motors Compressors. This practice is a sedesigned F-14, powered with a Cyclose status and in tended for Array ambulance service. Amother modifica tion of the F-14, a siggle-covered transport accepts nine parsengers and having a ware mounted on the fausture instead of the parasol mountag of the original P-14 will also be shown. The power plant for this reaches to either the Horset A or the Cyclene engine. The exhibit will be completed by an F-52, equipped for regular trans-Three and possibly four amplenes will be arranged in the space of the Ford Motor Company, August Division. While at the time of writing, it is not definitely determesed which three models will be shown, it is expected thet there will be one shall place a possible and a specie engined fressbare, the last of these mentioned bears of A two-place biplane of orthodox design, powered by Arrendt Corporation, Franklin Pa

In a 20x40 ft, apage, a 10 ft, model simble and a model hazarar well be displayed by the Goodynar Zeppelly Conposition. The model hangur will represent the dock or tion to these, two conventional Gypeies, a geared Conwhich the Always is now house built, and will have down seems and two Challengers, one a duranty and the other in operation aboving the nest of the skip morner is, and out. A full size 16-ft, mership propeller and various steem Most recent developments in the products of Denose of technical exceptions will be exhibited. The buest will Assert Corneration will be displayed, meledang the sixbe bounded by a railing constructed of greders representplace Ross Brougham, a five-place Lockbood Vega, the per the type used in the compression of the large warden two-place Lookbeed Series with an retractable looking Pening to a higher power range, Granville Benchers Aircraft, Inc., it planning to show the new Section Marking the easily of the Designs Aircraft Corporapowered by the 300 kg, Warp Tenior, It is the sam of Sportney, latest and largest of the Gas Bee Lee and



the Got Ber true luvier even legher performance then its one-place producessors. Its characteristics are identical with these of the curber mydels In eddition to the two

the Great Lakes Ameralt Transpar," make training stevice. Both models are Ameri-An enhibit more elaborate than those of previous years

M UCH interest has been aroused over the proposed do. the Privates and Keller Companies, are observed to festure this type of machine. The Kellett machine wheth true he shows in the result of two years of research and experienced work and is a two-place inde-tw-side, dual control type, basing a 165 bp, orgins and designated "Kollett K-2." The Pitters markets according to the funday, will be shown in its most refined force Two models of a new amphibous known as the "Suchem" will be introduced by the Knoll-Breaton Aircraft Campany, of Norwick, Corn. The designer in Felix Knott. Recent developments will be exhibited by More Averest, Inc., and the Nicholas-Bearley Agrelane Company will show a three-place open low-wing monothen, designated NR-6, and a new harb, were vendors A remediate side-by-order open low-wing proposition wiff he exhibited by the Paramount Aircraft Corporation and a high-wing miniget monoplane, powered with a 40 by three-cylinder Pover engine will be displayed by Kerren Arplanes, Inc. The new Warner Search tmox-Kari-Kena, proveduce cabia exceptione, has been crassed by the Swan Aircraft Corporation. A two class open monoplane will be displayed by the States Africall Corporation and it is possible that one other machine was be embeded in this arbitra. The Smannon Agrends Company will show its two place cabas monoplane Course, described on page 250 of this items The Locorney powered Stinson Airliner, on the field at Detroit last year devene the show and more used by a massier of transport counters, will be offered meether

will exhibit the one-place open monoplane, "Cub-

price a streetent Air Coach and one other avolun-

be recluded and a fourth also may be added.

is planted by the Heath Aircraft Corporation. There-

Departing from the policy of the United Aircraft and sauto-place monoplanes, present with Heath curious renocert at Denoit last year, this company is planning the largest prescriptions of the expections The Print & Whitney Division will contain six engines showing all of the recent refracements in the line, and ineluding the 300 hr. Waso Ignior, the Series C Wase. and the Hornet which on a recent 300 hr test stand run. developed 660 hp. at 2,100 range The assulant sections of the exhibit will be on either The inspirate seconds of the extract was as on onser-site of the Prict & Wattony display and well include a Wanp Cornell and a Wanp Basine P-12 as well as the new Hornet proposed Silvenin S. 41 Executive travel and survey, including also pag accord evolutions will be the feature of the Namedy S.43 amphibon built for Mr. E. W. Barben. The calus arrangement of this marking has been Assistant to reco side sheeping accommodations for four persons on extended expeditions. The forward compartures provides accommodation for two additional person Two sirpleses, one a new model, will be exhibited by the Northeso Arcraft Corporation division of Unsted Arcreft. Those are to be the fuedfur Continue light reserved and the continue Appear age over corkent loss seine reproving commend with the Menagen ore-cylinder inverted in-line engine The Strargue dresses will show two simpleses, one the Wast-cowned "Spectrus" and the other the "Advanced Transe" with the 300 hp. Waso I waso Another feeture of the cababit and he the extended of the new adjustable witch propeller by Hamilton, Squad. and Steel. A economiconal type of propeller burner bellow steel blades with the pitch adjustable on the ground will be available for inspection, and the recei recest developments in regression blades will be fou-Basing System, National Air Transport, and the Vanuer

with the four-place SM-EA Justice and four-place SM-78 Turson. One of the festeres of the Stiesne autiliar is as Two new models are to be shown by the Waco Aircraft Two interesting desires, probably mybaffer the connector on additions to the extensi opinion Market V Dackbey all world low-wing cable mesocolone and a which will be on view but her not undergone now one marking of Street dearen will be shown by the Street securedial changes. One of the new machanes in the Segretting Laboratories, Inc. Preserve the 40 hr. Model-Y-2 powered with the Continuenal A-70 Series 2, Condensated engine, Taylor Brothers Aircraft Concorn 165 bp. engree. Then us a development of the owners erres The other is a fewr-place cabes bigling, also with Visitors at the National Air Races last year will recall the Verwille Trainer which is to be exhibited at the show. An arrived mondactured by the Westbrook Area. In addition to the Travers, the Verville display will commatical Corporation also is to be shown and has been

Among the other light plane manufacturers who will. Company have been deceased previously in this arrivale Attong the other light price customiconsers who will company three some sectional previous arbitraries the Yellow Cab Airways, the Azestal Airways water their various holding companies. east Company and the Issuessianid Arrestsad. Exhibit plans here not yet been managed by the Air Transport Manufacturing Company, American Actu-

namical Corporation, Arrow Aircraft Company, Cerena Aircraft Company, E. M. Land Airplane Company, and Mercury Aircraft Company Device reference and reduction of total weight are the characteristics of the new Continuous Model

reduction of the cetics unit it in the switchestood of 10 per cent. A number of the detailed appropriates have been study in this engage to facilitate maintenance. One of these is a country detachable region has record which receives no safety were and it greate fight and secure. The eabliet will also, of course, unlaste the new Continued A-40 feer cylender, opposed light plane recen-Improved models of the Kinner B.5 225 hp. engine and the C-5 210 kp engine are to be included in the deplay of that company at Detroit. Improvements also have been made in the method of enclosing the value mechanism assembly in this parties. The new reals and housings are of aboveness, felt fixed and are nearly removable for easy accordibility. Duet and oil rightness are claimed for the arrangement. The familier Names K.5 will also be shown. In selfition to this notice of the exhibit, a cust every model of the B-5 engine will be available for importion. A new development on the K. 5 to the front exhaust An averted "Ver" 12-cylinder air couled engine will be introduced by the Friendill Consensy, Person Divison. This power plant is expected to develop 275 ha at 2450 rgun. The two brains of cylinders are sender in commettee and directions to the angle best of the

six cylinder Pairch@d cagine which also will be displayed A completed radio shorted it AND course is to be displayed by the Lyceweng Magnifecturing Company. Another engine of the same model with one-courter section ** and in the left safe of the accentary housing will be available to descentrate the functioning of the industries system. A part of this engine will be freebed in mound ments, without benefit of coarsel or entry polithing in he calabited by the Covoland Phonometer Tool Comments order that the visitors way set the parts to their pricess? The Glong L. Martin Meters Courses: Increase

Model 333, four-cylinder in Ess eswhere trooping with party and photo-In view of the report Sales class reverses, the products of the Sectors Accoraft and Regine Company have browne parrengents and The CO. 1 Model 1 and the SR-1 Model O show

ment times, operating at all average spend of approximately 1,600 years. are to be presented The exhibits of American Cirran Engines, Inc., Michigan Aero Engine Corneration, Packard Motor Car Corn. page, and Warner Aircraft Corporation are essentially the same as last were Physis for the exhibit of the Wright Company and Prom & Whitney

April, 1911 Water so attempt can be made to predict the contest of a number of the accountry exhibits, we devote the

remainder of the article to those who have informed us of their entertoon at the time of writing. All other substitutes will be hoted chewhere in this name An elaborate exhibit is being planned by the Alexense Company of America showing in an interaction was the man applications of its products to all branches of the prosp of authories, will be the Daw Chrescoll Company. Coveries sursest experience and budding service will be illustrated and described in a motion picture film to be shown by the Agree Company and festuring the Assess. carego type of langue door. A number of obstorrants of Austin-designed exports and sometimes will be on duction Amount Striking equipment will be shown by Crosse-Hunds, Pyle National and General Physics A selective test wheel control which allows the pilot to store the tail wheel when denied and to release it as that it new custor in a 360 deg circle, in to be a feature of the Then excludes well also regulate a large of accounty wheels said lattices as well as tall wheels for low procesure fires. A shock struct consulty developed for law pressure tures. and standard merchangeable such and wheel controls well also be deschared The Bendax exhibit will occupy spaces 122 to 138 inchales on Voccas Arreny, and will reduce Books. wheels, Echpic starters and presentors, Strombore carbereion, Ponece interceners and opapeace, Secreta resumetos. Deles eferrer, and anution agrarates. From weather instruments and Passagon propellers The force of proposition advected by Borry Buebane

at former arroads shows has been developed and expended and will include an extremely complete exhibit of swell scale models of services. Airphase moselerturers not conspersing with this company in the matter submitting accurately construened senie models Veryous state and types of shock absorber streets will and, so in the past, the group will include a wide pages of The cability of the Edo Aircraft Committees will be

Chevrolet Assemble Corporation, will exhibit the Martin arranged very much along the lines of less year and will

Two plant, side by side starting will observated to the new Assesse.

sonaint of one Model 6075 Sout, a pair of model 1525 flowin, respected above the boads of the spectation to facilities inspection of the bettern, a large cutyway section showing standardized construction, a collection of photographs, and a motion picture film. Probably the most agreefence feedure of this exhibit will be the in stallation of the new type water padders on the finite Des development is described on same 251 of this same predicessors. The form of the fluter, however, has been

shered somewhat and the "wee" of the bottom surremed from 20 deer to 10 deer decided. The traded second storp is retained, but the area of the stern has been reshared and the float motors of having question in the Electrification of sircraft (corraments, as usual, will he the thorse of the General Electric earlibit. The latest developments in remote control and remote indicating devices will be demonstrated

Recent developments in parachute design bere led to the constitution of the quick release barrens which is to be festured by the Irving Air Chute Corpusy, Inc. This but can be instantly released in landing over water by turning an ingresions holding device through an angle of 45 dec and pressing in on it. Another development calculated to encrease the comfort of pureclasts wearing pessengers is the Irwin Airplane Chair. This device is a served sirrient chair with suspect to weight, cost, and consist, with a small fitting back rack hidden beneath the

In appear

bles a normal chair,

exceed for the use.

the authorstory. Upon

senfore council the

arms are thrus!



the parachete ready for use. Parachete exhibits by the Bassell and Sawlate Communics are also observed.

for extraorishers for airrors will be included in the disolar of Water Kelde & Company A complete range of ball roller and truck bearings for ments and other uses will be portrayed. SKY Industries and the Timben Roller Bearing Company will also be smong the bearing exhibitors. A new development in the noark plan field is the Harley-Townsend "copper cooled" plag, designed by Roy T. Murley The large emiter electrode is surrounded by a conner take which conducts best away from the nose of the play. Laminated more contallation is used and the

resource and the Charming Source Plan Companying

Acadimeter of givernit lighting and arretion cable, both doin and radio shielded, will be abustrated by the Packard No fift sturbled spectors cable and a new effect ferror which has been developed to fit little the standard Scientific shielded granueto course. This fetter is cree. pact, yet provides a separate ground for each cable coremg into the magneto and any single cable can be removed. earth without disturbing the other wire. The shielding recently developed by the Pererr Corrown and described characters on this forms also will be about In addition to the most proces model of Herwood starter, the Sky Specialties Corporaters will show go pow rubber-convered test and cell line rubbes-The Sperry Gyroscope Company will exhibit its Gyros-Hornroe and Directional Gyrs in the booth of the Ameriran Gos Accumulator Company which will show the new Sperry AGA 1000 mm are floodlight A correlete has of magneton for nercomplical use, as well as greenwhere, spark plags, cods, switches and equipwent for Dicarl invection, is to be presented by the United American Bosch Corporation An airpicer wheel and brake, designed to conform to low pressure intermediate tire requirements is to be introduced by the Variety Menulacturing Company. The Habo radio shielded mark plan, the Lux fire exand already lighting engineers will be among the features of the Westinghouse enbylsit, and some of the products of the Airport Lighting division of this company are to he in one at Detroit City Airport foring the exposition. Several new products of the S. S. Where Devent Magnefacturer Covering will be resibble including rachamate drive shade expendition, remote tuning controls for radio motivery and individual months are since

Instructive exhibits are planted by the manufact of fucls and lubricants such as Kondall Referent Compuny, Fichfield Ctl Corporation, N. Y., Shell Petroleum Curporation, Sinches Refining Company, Stanavo Speci feature Board, Inc., and Vacuum Off Compage, tions radio employeest will be shown by The Puder puter ratio equipment will be income by The R. corner tables is expended during manufacture and The areal exhibits of forgings will be displayed by the forced firedy against the mice to produce tichtness Centre: Dren Farrier and Manufactures Consens and Other types of plags wil be shown by The B G Corthe Wyman-Gordon Countery, and continue will be about by the Bobs Aluminum & Beam Corporation.

CONTRACT AIR MAIL'S FUTURE

1 OR trailer years the melengring of Arresin Washington, It has been at the corner of Pennsylto the brownspace building that become the U.S. Post To be sell more specific, the focal point of ar transport development lies in the 40th four office occupied by the Hos. W Irving Glover, Second As unture Pretrauter General

velopment and in regaring the best and most modern mercial aviation." In response to the criticism from wenders of the committee, and

ware than 20 per over of the total revenue of transport lines came from the air small appropriation. The Port Office's above how often home taken for exceeded and an corriented, but Mr. Cleany raffed forceful amention an tions of the House of Representatives last November. "Mr Charmen," said Mr Giover, "the is a question of whether we are interested in available."

of the United States, in

of rust by land, sea, and air The Post office Department has given air conseport

The charrens. "That is not the question at all. What we are interested in is not spending all the money we Mr. Glover: "It is a question of whether we are onenough to think that the Post Office Department has tion in this cuspier as any upple arrany in the course. ment. We may have sport a lot of money. I dare say we have. But we have done more for the development of connected aviation in this country than the Army or the Navy The Post Office Decartment has done more ithan anyone shall in the way of selling

Office Department we would have been away up in the

rear, whereas today we are standing out in front in the

W. Bridge Sterne

AN INTERVIEW WITH

W. Irving Glover

chairman Ren Will N Wood of Indiana, that the Post Office Department was constantly expending air real service at an unreasonably

"200,000 people have flowe in six months due to the moster General thet air mail lines should equip these selves to carry connectors. The Postsunder Connect and when he was here, everferner, 'ster with as for a country of years more. Give the sir mail operator and the onabehand it as reports weather reports, make, and rater mediate fields, and lighted airways, and I am the few one to say that after that period if the people won't fix, then the precement shall withdraw from the picture So recently as just this last week I been that he relied with the President along that very line, that if the people would not fly after two years, after this picture was planes and beeying these avertion companies building pleases are the business. It has developed asto a real .
besiness in this country. The Department of Commence ser and they are doing it then it would be time for records show that; and if it had not been for the Post Congress to say this thing is a flop and so longer are we come to ask for any unbody."

The suggestion that the Post Office Department's

those presented in air transport. We have nearly a further interpretation of Mr. Glover's views, which pensens an unique importance for the operators of acinto and the modderders of transport commercies. We The office of the Second Assistant Postmaner General is full of reminders of the sir suit. A man of rostes In operation or in prospect blankets must of one take of the room A model of one of the early air mail planes hangs from the criting. Among the wall decreations are powers ofvertoug the air mail service, and the original of the cartoon of the Post Office leading air transport "The mr mad." Mr. Glover begun, "is steadily guess bearing with the Assessment result. It is not not fully understood. It is still being missened in some cases. But retainers of colleges are convene saver and the amount of must handled in stendily increasing. The total postal receipts for all classes of mult guster dropped off in every month of 1930, as consumed with 1929. In some namely

they were off at much as 16 per cent. But in every single

smooth the air could showed a gate over the previous years poundage, averaging better than 10 per cont. I expect

"But another art of questions is raised by the minimes of and and paramager business. It is there that another

support for eviation might be terminated to a couple of

years under any conditions is a very disturbing one to

tracty curts. From our point of view passenger transthat trul for a couple of years. If we do not then consafer that it has restriked study, we shall so back to the ser coul as a recounte undertaking served by fast open tockpit planes without thought of passenger accommodation and raid for only or a rate which will cover the "In the measures operators will have to face the proppert of rate reduction. Within the past two works IMr. Gleave was combine on March 61 we have but a conference of air stall operators which has resulted in a revision of rate schedules and a reduction of \$2,000,000 religition of patterners and read corretors is cancellal in coder that the passenger traffic near be handled at all on ser reaccable terms. There are other cases in which releasement and addition to their number with the eventue interest. The Ludicaton has in a recently instance of the resistance of spacesful and revolut service without postal samutance, but the Ladington line operates on as exceptionally favorable and well-traveled some. Me and is reported to beve others in used in the Midwant There are others within my own knowledge that have not been sentertaken. I sen thanking ourneshady of the reason bilities between the cases of the Mehawk Valley, Duffula. Rochester, Systems, and Diver and New York, Pers secule realise that there is a larger passenger truffly recor that roote than between New York and Washington, "These passenger operations are economically educin intered. They have to be. I believe that in home recovery they set a good example which will make some of our present mad contractors wake up and reconsider their ra policies. At present there is too much dustination of facilities. Parellel lines are maintaining separate air-

ports, separate pround organizations where they made

with adverture co-courses onto terrorite trade of We define to provide a fearural own for debbures

"That is our position. I have always been an enshu-

studie believer in air transport as developed strongh the

for the fature, but the fature is not going to take care

I st my corn belod that on many course the inner

of storif. There is pleasy of hard work about of us." A we what, the merviewer saked, did Mr. Glover think of the prospects of changes in the sir real most "We are not going to try to extend air stall to every vellage in the United States. We want to concentrate on reases which prove the existence of a submastial traffic and give them a really first-class service. By the time that we have provided the rouses asserted in the current sportoration bill and one or two others, we shall feel that the map is sufficiently filled in. Thereafter we expect to concentrate effects more uses instrument of drawing more new lines across the small vacuus spectra So far as Hawati goes, there are so funds available and nothing could in any once he done said on view has In Alaska there is a pendur retention, which has foreibly Destruced the value and recognity of his said server to can of the way regions. We have recently advertised for our work pervice on 26 routes within Alaska Cour mchokas now consecute between Alaria and the United

States) The terms of the advertisequest did not specify the recess of correspond of the earl. They called for results and efficient service at minimum cost, and the contractor could operate with dog sleds, or emergellar tractors, or asymbolog be Shed. At a matter of fact however, two bute received andertook to provide nertal service on terms more favorable than rould be observed They will be ordinary mad contracts, and the correct the fire coors conversely received for the overest service. will use the surplant because he fads it the must restable."

VIEWPOINT

N THE long run national exhibitions in any lades. send field one jentify themselves only as they are provenied in effective rains of the numbers extensed An exchange prigraphy perponentic for sales orders, the sales reseagers of exhabiting organizations have a very firect interest in the conduct of any show. In order to cheers an everygenon of courses from this errors, with reference to the forthcoming National Aircraft Show. a letter was remoisted surrouting discussion of causin specific planes of show management which have been added to controversy in the past. A grafifying marrher of replies were received from representative officials, surfacione correctation presidents, prescui managera etc. as well as sales managers. On many possis more or

less postere agreement has been

reached, but there are others that

gill show wide differences of comion

the discretion could run, ten topics

were outlined in the circular letters.

To provide a set of rails on which



Should it be armed at the local public already professionally operating assertally or at curior a renerally broundle nation wide cublicity? 2 There should be a certain barmony in the general occasions the request has officially here much that all

talk about wrice cetting prospects and chesn simbours to relieve price theidily on the part of the possible purchaser by guaranteeing mustimance of proce for six executor or some other substantial served? They again has been a matter much discussed in appointable B What should the attitude of the exhibitor be toward the treasure of the show he event reaches at school children? Should they be kept at arm's leastly or welcomed sets the stand and given unlessed com-

selesests should be in evening dress after the digger bour. In this a good plan? Should the atmosphere of the exhibition be that of the fiveur field, or of the 3 Is it desirable to call the attention of visitors to the structural details of an aircraft, or should attention Specifically, should cutsway models, wour with the fabric removed, etc., be shown?

10 Should the aircraft industry normally being our arrund models at show taxe, keeping these sever well the occurre of the above or a few days before as the automobile industry used to do, or should it break naves from the annual model and trains improvements and announce acception at progretar intervals, as the automobile manufacturers plan to do at present? That these questions were pertinent was evidenced by the time and thought obviously gives to their decision

4. In it desirable that the visiting public be allowed a rather free hand in featuring and climbing upon the exhibits, or is it admissible to not the exhibit more a throse, so to speak, and keep the ockookers at a respectful distance by a silk cond?

Excepts from many of the hitters are rebblohed to the following pages and all of them have been tabulated in detail as a basis for the formulation of a group opinion on each making. Thirty-one replies were considered at of which with few exceptame treated each of the ten It was fairly wall agreed that the secrial arrest of the show should be as broad as possible, and as public rate and in character Only four of the sales renninger would place the prisonry emphasis on the issuediste local on the uset of the yubbe has remederable educational the crobes favored throwing The wear and true staned by second courses through caleen or sitting in cockpits in very high and the experite viewing transport cabins, and the barring of everyone changes. Cases are on record where persons highly injurexted from a technical or purchasing standpoint, here found it almost impossible to approach an exhibit or to

ers and describences, and (4) local markets in on An interesting divergence of openes appears in the discussion of show atmosphere in general, and of evening dress for salesmen in carticular. Thirteen seedies for cout, and fearteen were opposed to the general adoption. of evening dress by show attendants. One preson be-



paramount. The general speakes rated the importance of

liced it to be a mut-

curb exhibitor and

three did not express

seve and rowbert of

the show personnel

then as a side show.

positive server and the

cuestion is funed whether

show exhibitors almost to-

variably have to face is the

which have been damaged on

dleng," Although it is agreed

they are really worth it

That estaway models and exposed structural details have arent edecational value is admitted, but only thirteen. of the 31 letters received were definitely in favor of their swheten is the show exhibit. Ten were opposed to their one believes that they detracted from an exhibit on a whole, -- eig would leave the matter entirely to the concretion of the cabilities, and two refrained from exreceiver any opinion. It is unrevesting to note that day

sactifically appoints countries are drawn from the same as:

of conditions,-in one case exposed structures being fav-

cord because they show the real strength of construction.

cutaway models excuse apparent feelby to have events

of persons whose engineering education does not comple

rain access to salesmen, without unreasonable delay in a

rearbet and one rated dealer and distributor appeal as ship to limit the access of the general public to exhibits learing detailed examination of the opplyment to the disappeal as to (1) general public, (2) operators, (3) deal- eserion of the personnel as charge Actual fiving demonstrations are everly and in the only to real recovered. Ten favor making an many flight deepcontrations as possible (some to the extent of making free simpluse rides available to the general public), and five would leave the matter in the bands of the exhibit Opinion is very strongly in favor of limiting printed advertising coulder for peneral distribution to relatively inexpensive leafers, holding buck the rates elaborate and costly distrated catalogs for real prospects. Tweezysix reader wery defaultly of the profess, was famound catalor distribution, reportless of excesses, for un edisonficeal value, and two favored a restricted destribution of

In the number of price grotation only one nerven



guarantees were feasible, exsecurity to desires and destributors, and there others would leave the matter at the discretion of the augustacturer. Four persons did not express an opinion on this matter First advancer the entire enclasion of children from the show, but it is obvious that they must be kept under opetroi. The majority proposes that children he admitted to

rebitation should

provide whatever

additional account

their adabas. It

much could be ac complished in the

coeration with the

tion. Very few to voccé unlimited

to control that exhibits of this type mently cost one—they may be admitted an accompanied. At such times the A symmetry on the conduct of accountical exhibits consisting of the episions of some thirty leaders in the sales field. The first two pages are devoted to a study of the replice of the group to ten selected questions. On the next ten pages are the responses in detail.

long line of the merely extious. It appears to be desire models and designs when and as they become available.

neste cutaloners to children, skhough a tensive literature has multipe edarational value Although the automobile trade offers sufficient preced-

adults, and that special times be definitely set aside when

ent for placing the assourcement of new arrelane models on an annual basis, only four of the 27 who discussed that nouse concluded that such a occordary would be at bearing to the industry. In the present state of the art changes and suprovements are continual, and the general concessor of courses was for the armonement of new

perts, restricted, dealer or chaldy to along the firing is part of the time during is probably servicion the

reservoision or the factor the places are

and with the naryong measuremen gates, for the same as front that madeliters and agents for warm factory prison. It Transities has been percentage the page on the part of the parchases and the page on the part of the parchases and the con-ract before, it will be up to the measure-nationmen, as been the over this affitch I now part best cack one will use they own methods. (19) Certain deblars aren to be our of the tearenty with of all of the tearenty with of all of the tearent factor and diver persons than early whose of yet alteraparts should be given town to the control of the control EMPRASIZE SAFRYY AND COMPORT By Walliam R Stout

or symbolise of the decisional state of the decision of the de Facility Color was recovered by the color of the form. The color of th I se bread a destributers as necessite byered our field) at soint to

parties by parties a business policy who PUT RYENY VISITOR By Forl F Hucher Country Works Commenter

for should want receden. The sangles were to makers as representatives, even having some of our people dressed or firing circles, and the effect was no on or fiving ciribon, and the lifted was now.

(1) The pure yes shall then come of the recorded circuit of the Justice model. We seem of the recorded circuit of the Justice model. We seem of the Articoposet that the Seem of the purpose of the pur

down that would assume to our bounds moved bein gathing every visite to the three is then are. We shall have one of each model and three of the James such point for the state of the control of the shall be to the control of the control of the state of the control of the control of the trade and parapete. We are working to a plan at this time with another concern or girls for flights in the Conder and pofor greend developes, holding and before large and the prospects.

(2) the personal question is a FALF price to best, in the prospects will be from prople off over the contrary.

(3) Our stand on this matter is they

AVIATION

and up for market in such model in advance of the above. We shall go to the above the year, mady to many belt with the party of the party belt our

PRICE GUARANTEE IS COOR EUSINESS By Few H. Nelson WITHOUT question, we find that the

second mound of an aircraft heads be directed at the public right; then to not specific group to have subtracted and the

or work posse, said

-

perfinder about the senteur which your salesment handle these people that the fact that they are diversed as evening choice with an are of may-fordilly which would now be at all as beginning with the work to be encomplished. The man on days at our entities will be nation for ware programs give and controlled to your terminal and com-ant controlled to your terminal to immunicate

SCHOOL CO-OPEATION By W. B. Hallaget THE appeal that we will endower to make as the Rational Alexands bloom the wast will be to secure general favor-able states with publishes. We also very much concerned alog with

out that us the resise is not and other reported roles projection incom-by the thousand of our weight like three should, of overse, be in the population distinct of St. Louis. In this way, of the projection

of the company representative and evaluable on demands side on demand.

(f) it is our leading that either E.O.S. or F.A.F. iscoory proces chicald be given a preference to protect on a preference to prose, on the equipment chilement on the leading where the show is laid. It may sides proc adversarious in fact, It may sides proc adversarious in december of the processor, this information in december of the processor, but information may be obtained on request risons the nature.

the problems of our dealers and distrib-Descriptioner special attraction.

We saw morting our people at the

THE SCHOOL CHILDREN By Varsor H. Roos Asserts Asserted Company

WHEREAN store of beyon the





erches exhibits should be accountly as least a part of home control those who generates is being brought up to nagoti collect and the caser it in the visitors are two const, otherwise in a majoritation being in more manufactual way. By The more First deconviruation group (3) We are of the policies that demons is though they don't which you satisfy sequent forms at consequence, 1 do not consequence, 2 do not conse colonia and ministration. Applicately of this local political by the sales from 3 pins to the first political by the sales from 3 pins to the first and ministration or calconised weight taken my space and are not particularly information, except to experts at the market and designs. Event is, of convey, the quantitude and designs. Event is, of convey, the quantitude and designs. Event is, of convey, the quantitude separate processed, it is given by advantage the processed, it is given on Approved Type Corrisonate, it does preserve its Type Corrisonate, it does preserve its processing the convey of the processing the processing the processes. wreten should be limited to prospective or exhibit (6) Advertising mater, 2 believe, a ne oteford to rather ample becking, and fee establish which should be last under come and held for prospective customers only. to sales for a period of as more four mouths previous to the sleep capable the beauties seasonal. The order lots industry has discovered the and regolds position here from at. That she to point strongh of the equivalence of observe conjugate, it seems that a cry of suggesters directly, which can seem judiciously given out, would be one acceptable, andly way a manufacturer exa ad-e has poon at delivery at the factory-mains for the local declars to quite should be given on the spanes that of delivery to field and factors UNIT AS A VROLE TO BE ENCOURAGED stream to group on the facts of defroity as fielding factory.

In field mile factory.

In field mile factory is an extended to an extended to the facts of the facts.

(3) School stabilities, we believe should be admitted to the facts of the facts.

(4) School stabilities, we believe should be admitted to the show as held price and gives as much separationly as possible to field the places owner. They should also be given as the should be facts of greater than the facts of the the facts Type Cofficials, if this perloage its appropriate complete enhances characteristic should ensure edgered which cannot be handled and should should be shoulded and should should be shoulded and should be should be should be an additionable to the contract topical media according to have copraine typical media according to have coprained by the contractions, which the lookers on contract all things hand. By R. W. Fulton has been bury arthrey . Flast Aburatt, Inc. properties of September sublished at the sensitive of off-bread advanced school, for set that school and instriction request, the test state of which we recognize for and with the first school and the sensitive for sensitive for sensitive for sensitive for sensitive school sens QUESTION I depends embedy upon the tree of approxit transferenced and OF RETAIL MARKET on consistence: (a) Transport mentioned and on consistence: (a) Transport meta sheath to almost an public convers and community organizations which could use made asset By F. W. Neilton (II) We are appeard to the policy of brigging not assessed models as we there is helps make the broncess more approxima-tion is usuall according observation to differently Asserted Corporation banded or extered by these who are executed prospects. Facilities about arranged by making of steen and plan. A NATIONAL show such as that is to be beld as Detroit much assembly purpose. As a marker of an personne is one major show as , if it looks is plue, the holding exhibition is also the holding that all parts of the plear one be sol, if seven first be utaged to assume or in legacy to put you where the embletion in a locality where the reserved public formables the real state. or males.

chool chaldens should be welcome as

anthing, but if it is possible, detion about to used as persenting them
light on the plane, as well as regards the
after of themseur which is given to them. the phone is of how satisfy over and ker in the rotal buyer claim. This stan-belief tree with regred to deduce and dis-tributers, for it is for these agencies that the extremt of solid forwar assess to be to manufacturer and spreading costs, "MANBANDLE" PLANES he blocal with his departmentance. If the operating costs are high, I see no remain with streamentant about he gives to phere at the show quantity of Shristers which is given to thom.

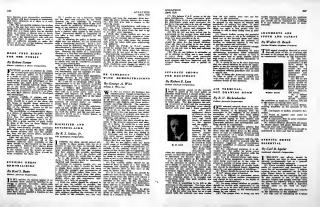
It is expensional for all surplane manufacturity is assumed any method at one time therity the year, and for several research is a before is assumed to the property of the control of t should culters seather the descri-ted come for the fring field. Our fering field, Our best offurts should By Willfred G. Moore Once who do not show an arrow (6) It is believed that there should be Infrast Autobies Commerce pracryoments or mirkly as completed by (6) It is believed that there should be a free charledges of adaptate and attraction exhibit. Those well had have very into tonic place and well not only do good to the interduple mendantness, but will no the interduple mendantness. F THERE is to be only one extend appreh above, secondly, second appeal could be made to dealers and distributors. open making the B. W. Police e if it from them that the asserting ac-lettry can both for immediate residen in he wer of sales. Other framers of the With report to prove, it notice to the in regulated some or feathbase, assessing of dealers or deathbase, or and shall quote the name function of report purposes. If a new earlies for expert purposes, it he exceeds for expert purposes. If a new earlies for the upon, it he exceeds all a first purposes of the exceed of a first purpose. gible application of the sections to the polshow, such in enteresting the local published lie. The dacting overloy owns populated by some representations at the try has been in glassour, but we taken the industry has not arrived taken the industry has not arrived. Ry W R. Merco Every good adjection assessments the vide of energy approximate. It appears pressor attendence at a above will I believe, from the locality in which and the to properly contact dealer trobustres, and such potential reta-as result infreed the show. It also price weathy asked for the sirved is consists a reduction, the manager of series to the complete appliant. The average purchaser of outside it and growthy con-cessed with intractive details so long a general purchase the property of the Eryphine has been greated on Appension maintenance resource a subject of special-free respect. I do not lest consider to give not builter common that they is to find the ow models memperating (1) figured above models incorporating expensive feath and marrier details can beel be above without personning passent public to obtain at and out.

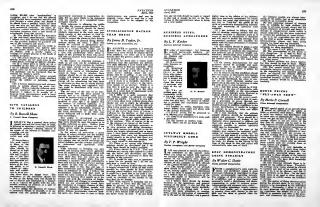
(2) New models about the generously flows on descentitation but known types or models about only in flows when course. type Certificate. (V) School children should be understand to the extense of artists than consult advantage or consultation of the control of th in they want to 21 the pa is being in all simplence material psychological con-der in the tryping in management which must be tables is qualify most takedatany annual victor at an according above your emislay for the same who is an artest for an anglane. W. B. Mape for for an appliant.

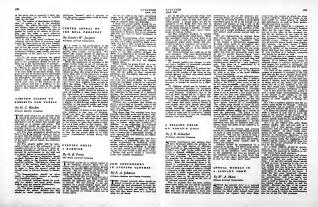
I before it has been demonstrated but for our properties of the proof of t Here permany I I think it is describle so let the tense it also conset with the so-the book browner, found it and the to your of you exhibit our at Street interctal factor is size. In fact, where prevent circumstances make x are in vitig. As the propert face, there are previous, then on previous distances on takes to be an attalkination of preve or our charge forward or described in the bestimen at all.

(47) At the prevent inner challeng gas our (AD) Press the point of view of a com-gratulated from members and the comming part who is not has been producing a

AVIATION







TOURING EUROPE

This map shows only principal abbu-riation by Mr. Manning. Many of these common work force personal States BY PRIVATE PLANE

By LeRoy Manning

American pilos. within his own quantry does not realize how for runate his position is with regard to freedom from gov-(creege. He may be asked when he lends at an American

surport, to sign our regreer, stating his name, arrival and departure, etc., although Lor Book," the "Aeroptore Lor Book," and an early even then as nonressure overlooked. His traveline easi log book for each engage—so small bluary. In addition savet often consists of his refer's license and a sheekto these, we must have a "Trictique" or "Carnet de Pasbook. He taken off when he pleases, without severe a word to assume; files wherever he chooses, and, when be lands, roboth asks him wheney or whether. He can trovel from the Artestic to the Parific in this free and On the other hand, when the American pilot starts across Europe, fiving a privately owned machine, he onconserve a herrage of official red tape which is either discoveraging or assumed, december upon his temperament and in how much of a harry he is. The formulates and delays at some European errports are so proposter-ous and stapid as to be almost unbehrenble to apropo-

Let us suppose we are leaving Courdon, the arrest London, for the first twee, bound for some point on the Consisent. Pirst, we must pay our bill, and we find that in addition to the charge for hargar space we much pay a landing fee of 30 shillings (about \$7.25) for every landing we have made on the arrange. We not our machase out of the hasger, and are preparing to start when an aircleague official asks us if we have researed our papers. "What papers I" we ask. "Why, all the papers?" be replies, nonewhat grieved at our ignorance. We go back to the officer, and are informed that, as addition to the exumulation of our passports, we must present our for books. For a three-present arrianc, we would carry five log books, all of a special form, printed and sold by the government printing office. They are the "Journey

sage," so it is called on the Continent, for customs re Quirements. Making the necessary centries to this is a long and archanas process. Having femiled with these we start in on the real work of the day. We must make cut our "Pannager and Baggage List" on a special force provided for that purpose. Then come two capies of there expire of the "Marrier of Cargo." Some of these forest are not available at the surport offices, and we swan go to the Imperial Airways' offices and horrow a combparamagnes are carried, more forms renat be attended I harved to sign all my passengers on as members of the crew for the sake of saving time, and I have left eral colon attendants (female), and a built dozen radio operators. If you contemplate starting from Crowdon on a confinencial tour at a private machine, my advice in to go to the airdrosse the day before and get the neces-sary paper work in order. To American pilots this may sound rebuildons, but it is around and serious aduce. To spite of all the delays, Crowden is a pleasure place, and eithough the English officials issued on corrying out all the formalizes and darkingtons of their mate museum sary caper work to the smallest detail, they are politi and considerate about it is some of them actually one pathetie. The best feature of Covedon is that the official of the surport staff do not dress themselves up in gifteen

ing uniforms and scored assessments at a stranger as then

AVIATION

do in more received all countries. So, although you will take off from Croydon curring softly, and thoroughly reserved with the approximable investiges. I reside that you will be glad to get back there upon your return from the Continent, for, in Croydon, you can at least

THE English successional service is, in my opinion, the last in Europe. The reports are frequent, conpiete, sed remarkably accurate. The English maps see better than scrething I have seen it America. The scale to is benefit ally represented. As used by the lowered Ave ways, the supe are made up in book form, about on insher square, and waterproofed. They are very supernot—too expensive for the occasional transfer, but well yated to sirfue work. The sadio system used in differ cut from anything in America, and it is quite worth while tion. Two-way telephone is used, and savigation in bed pilor requests his posture; three statues (see of there directional auterman. The two orthing stations advise

fully sexuale device, plots the obose bearings of the ma-

For secale are owner of the extremes of pleasure and amoremer that are the lot of the private orner who attempts to tour Europe in his own machine. In the course of two seamore Mr. Massing visited practically every sirdress of importance on the European continent in the leterests of the Feed Meter Company. Out of this experience he offers a number of suggestions which should prove invaluable to supose who is contemplating taking an sirplane abread for private use.

and the print is advised accordingly. It recedes about two minutes to obtain the "line".
Altogether, I believe the American pilot will enpur his stay at Crepter. The botel on the aircost is more! the food exections, and there is much to keep him armed. The fact that there is no neep, and only a very derty refler towel is the public work room is only one of the many namer properties to which one gradually these. Where the bearings reterrect, the plane must be, because accordinged. We text out for taking off and



tire, the Assertion pilet particularly if he is frees the Mutate West, finds himself to really strange territory THE and twist continuedly Solds are send teleprote and corry other concentible shows There is no monthly way for a stranger to get from one point to the reber except by following a crrefully prepared compass warm which must be entered If we are going to Paris and hour no radio memericie on the English coast. The coerator there advises the French court ainfrower that

are eiven the "clear" ramal

send scarchight with a con-

contrated bears which the control officer gives at the

paid to mean of an ordinary ren with We take off and

the charming Earlish comtryside stretches out before

as And bere, for the first

a marking of a certain became number is over the charsel. When the mackuse arrives at Bordogne, on the French court, the pilot sease error again. The French operator than advises the English station that the crosstry has been safely reade. It is not necessary to go lower than 3,000 ft to naval these sinfroses, so the observers use powerful field plasses, and acknowledge And so to Parm. Le Bourget sanfrome in large and fastly was enemped. We circle the field to the left, as to the answered custom at European assumes. The word direction is indicated by a session por on the field, as it is on nearly all important contracted androuse. This wa an sindrame accessory that American operators marks well adopt, as it is the one partiest wind direction and telectiv sellingter for durlish firms. As made the sende pers are sometimes absorbed, but more often an discovered wind too a used. We had not may you leady up and down the langur lips wondering where we

are supposed to put the machine. Nobody seems to know At American surports of this size and importance a half down operators would be out waving an frantcally up to their own particular gazoline pumps, but nothing like that ever hopers over here. At Le Bourget we are again subjected to enders emtown formalely, and we have the changer of deriving all of our begyage out on the suspection tables. Erger is the log books must be made on the area and officially scaled and stamped. Passports great be examined, and various papers filled out, the Triptopus usual be filled out. and estretted, etc. Gazolius and et are obtained only after raccy long and heated decessions, at it the Coun-

A¹⁰⁰ so we go on through Europe; some places good, many last, some very had. The one thing that is alware the same to the endless formality of European offielaldors. No matter where we lared, we never escape the authorities A few examples. In Rome, where I rece landed on a Sunday afternoon, on my way to Naples, I was held over parks because the consense officer did over arrive such three boses after I haded. In Briefin a small city down in the heel of Ruly, where we landed for exceller, we were in a hunty to be on our way over to Greece. Set we had to seesawe the cowing from all there express so that the head controls setbooks could exercise the cases plates on the engine crusicones and ancertain of the engineer were the name as those named in our low banks. Just what difference it could have made to here I was never able to leave. In Alberrye, Justy, a sealth from on the States Riviers, between Moore Carlo and Genos. I once landed in a result interpredicts military field, due to shortege of fact. I was assurednastly arrested and held over might became I had handed without our. minimo and percussion had to be obtained formally from loops before I was released. There were no other strolance on the field, and nothing of military impact. ance to see, but that made no difference. Another neerdigings of European ariefors in the Toron history permits or navigues are as assertion area, shaded in red, and marked "fring probabiled." These areas are of navigues since, from one to breasty or more rates space, and flying over them is probabled

easy European malitary people know hitle of perchalogy.

for if there is anything that will make the average person

Corners about a place it to warrang him that he suce nor to Nucleo.



see it. Flying disease over the city is probabled in Paris and in entry of the other large capitals. Where fiver or recrepted, it must be done as hock abitudes he visiting rely is advised of the book aring as one or he back. Accordance, if you wish to have a good work of the old world expends from the net, you must fin around over them before you make your first landing Through the Bullets states the encounters many trees. cover-and sometimes assessing things. In one Hallon country, visiting airrests are strictly tophedden to come radio equipment. In the next country, cale on hear's fight to distance, radio is required by lew for yeary sayengle in calling, same or some persons. I am capacity awarter the time when some vasing ship tries to get through with more than for recode as I would blue to know the account to then typical Balkon riddle. In was es the Bulkers, incidentally, that I found the very last word in the solution of the mobiles, of had weather from: In Brignade, the capital of Ingoelpoin, they not all their commercial strine machines in storage in Octoher and take them out sexin to April Whether then are years behind the times or years about it an open greened which consided our name with control for many chapment and requestioned debates Progress through those countries is slow. One soon hearen that if fore phodutchy no good to try to harry the officials in the parlaments of what they consider their define. The more was advantable and thereton the shows they more. The only could effective way to heavy things along to be offer what I shall call for the take of politimens, a dip-I consider the fease flight in Farepe that which crosses the whole more of the Airo, from northern German swo northern linky. The somery is indestribute. Denot attende this flight, however, except in perfect weather. Design the wester weather the evine in the Polate afternoon, and the only runly good flying weather is in the models of the day. This flight can be made considerably at 15,000 ft. although some of the peaks are bisher. Personally, I should not over to make this supposedly for the protection of indicary server. Accorfight is a negle-engined environ.

Another fee fight in from Marselles along the

French and Station Reviers, and down the coast of State

AVIATION

Green is another benefited country when viewed from the life the carrier is exceptionary and, and the armost North from the Mediterranean, through the Bulkan states and the sendler countries of central Europe, there a little to interest the ofe traveller, although the larger oties are worth a viel. The best couts is Salenfer, Sofia, Racharest, Belgende, Budapest, Visson, Prague The learner is a diff one in the winter months, and the American point fiving it for the arst time about plin to compete decough this regime before the first of November.

To Germany there is seach to see. Some of the number towns of central Germany, in the revice about Núrsberg and Responds are an expent and currentees as virgent from the air that the American pilot, sometorned to modern industrial towns our accreek Nelson his eyes. The airports at the larger German diffes are probably the finest in Europe. The one in Hamburg, perfectable, white not so furnous as Templehof in Berlin is much figer and seasy modern, and represents the latest European development in sirport construction. In Germore our tern one of the few serious European efforts to develop night flying, and I can best describe the system by assert that the average American state mud sales would out his lob and so back to the farm if he were course lights are small and far asset, the country were had for forced landangs, and no parachutes are provided. A most shore appendix in Germany. I have never few tourness see them. At callroad junctions, and other encountered anothing to difficult as flying themsels the studiers and western industrial regions of Germany. The overtry is decade previously, and the refereds roods, rivers and casals, towns, and other landmarks prior is looking at his man be crosses over a half doors checking counts. If the weather is at all but, it really requires two men to navigate accurately. I have flown have encountered had surdefly and have wondered from our course, which, incidentally discreases the old legeral that there never was a pilot who admitted be was In Holland one suspects causis and windrafts, and he is: not drappointed. The Royal Dutch Airline, commonly business. Size organization of its kind in Europe, and I protect the prediction that it will be the first siding in Excee to free stuff from the exception art of the manufer votices and show a profit on an independent Description should be included on any comprehensive fore, and in a hane for both land and sendance. The next orderly acceptance of the countrylide reflects the tenpermissed and liabits of the people of this beautiful

terminy taxe advantage of it. He rouse from parties has up through the Sairic states by way of Dannig. Kongelsery, through Lithuania and Latvia to Eign.

They is not a carriedarly interesting facts, being exactly

fiet, level and somewhat mershy land. Leaving Riga, we

readily available. If one has an opportunity to visit Rossis ha should certainly take advantage of it. The route from Berlin

6. If you want pure gazeline webout beard mature, openal arrangements will have to be made at each or-7. Carry plenty of space parts. Spark plays can be had seen there, but almost nothing the fits American & Don't bother with radio engineers unless you are an expolent longuest. 9 Carry to little barrage as provide. If you must buve sourceains to take home, buy them in New York after you return. They are theaper there, and it raves

more at Monoger. The efficient formathing are unforthnely about over our horston was not occord. The Moscow sirport is modern and well egupped, and in one of the busines in Farrow. The Benefices are building and of the female is Europe. The Resident are busing and operating all-metal airolanes of their own design, both rengla and stuff-engaged, and they appear to be excellent chine. They are correfine some of the langest sirlings as the world several of which are flown at capte. Acres

from the bendengetees in Moscow. The aviation group in the Russian capital are eager, enducated, and well I am often asked about the old bottle fields of France. of war still visible from the sar, and if so, where? One of the best trips for a view of this territory is from Antenno or Reason's direct to Paris. This trip covers the old trench lines near Mons, St. Quentre, Sources. est. Another good view of the old trenches of the Western Front can be seen in a flight up the valley of the Marse and Aisse rivers, between Paris and Strasshere. Where the trenders be in mitrosted land, then beve been filled in and pipeahed over, and they are invisible to the visitor on the ground. From the sat, howdecoloration of the and where the treather formerly lay. As one then along he can see the excess lives stretching out for miles on each side, sometimes close together constitues which street. Where the reserbes were due in soil not unishly for cultivation they are grate unchanged. These spets are estable for book on to Mile color from yorks and milesofs and I believe

reported corresponding points, and our usually see To trees planning as social journey over Europe with a privately owned sirplane, either for bettern or measure. Lother the fellowing suppositions: 1. Make the supressy between Auril and November, if 2 Ovder maps at least two weeks in advance. The Assuredule Association in London is seesared to fur-3. Permission to fly over foreign countries should be are feel for at the American Leatings in Paris. 4 Secure a "Triplique" from the Automobile Associston of London. It results simplifies ourses pro-5 Do not ottower to research research in your warbins, as the penalties are very severe. Few Europear countries allow a private machine to carry a

so can to Savdensk, Ramin, an ancient walled city of considerable historical importance. Moscow is the next 10 He nations, and never allow yourself to become then. We were never sweet corchally received than we

THE AERONAUTICAL CHAMBER CARRIES ON



POKESMAN, mediator, couch and manufactures neit: there is definite word the Aeronautical Chamber of Commerce 18th many for such a superstructure roles and performs every furnitions as the reducer's and probably no other trade covanisation. It recently completed its teath year of service, emerging in the strongest position is has yet provided. Deeping that your the Quarter tuned on you that is, it does not exist machinery and was addressed seport at a fine when of and for most, it is a many units of the industry were headed toward disbrader between all the letteration. Of course, it led its own both or both made between at the

had an ability to make adjustments and a jundamentally sound program brought their remark. This mouth it conduct of a national show. This year the Chamber co-operated with the Detroit Board of Commerce in this That it was not all plain saling is partly evidenced by

the Churcher's books. The colleges of many againment collections, chiefly from such assesses at the membership donument of certain properted programs. Mowever, the then the year below. Though found by the trend of the tires to face 1902 with a considerably reduced hadget, no appreciable certainment of its fandamental functions in registerplated and there is to be fixed extent sion along a number of lines Nor was the year desired of extenders. In fact the Chamber would be arroug the first to adopt that conteras a whole nor in part does it "know it all " As the industry's representative in relations with the maker and with povernment departments, it has experienced a strengthening of mutual respect and a better understan ng of various and conflicting viewpowers. The aviation ing of various and contacting variousies. Les avancos, présent changes constantly. There must be frank retrac-tions from time to time. Difficulture of on small sufficer. are assessment contributed by competition and farbru among units belonging to the Chamber, a reflection of the degression and the struggle for survival. Since its organisation in 1921 the Chamber has grown

from a membership of about 100 to 746. It occupies

a unique section and less a peculiar form designed to

OF THE CHAMBER

try affective to 8 and only for their eclicative purpose but for the purposes of only for their concerns purpose but for the parapose on any substantial group. It should be emphasized in this remark that one of its basic originals is the charice of all noted backerbin decrees and authority or the banks of sections and committees correspond of members on representatives of member concerns. The responsibility of the Chamber's staff is for executive only incidentally for national. Another have preciple in that each nex-The oversteen rests are called accepts and consentbers of the Chamber grouped by courses retered, the latter consequer extinuous charged with the banding

tary, or insurance problems. Each section and conventure (the serious appoint sub-conventions, also, to carry our chance of the service's represent is assistant to a science person of the manager who assists the groups on a fellitime basis. The entire personnent staff is located at New York, with the exercises of a few clocks at The Charder has sought to avoid over-controllisation by the introduction of six grographical sub-divisions.

each areasted over by a particular vice-president A concept bourses not many activities had themselves to each a breakdown. The work of the pireless and envise carefacturers, for instance, is naturally contribued although committee meetings are held at welely scattered counts to said the swared convenience. Revised organisales exists to provide machinery for whatever remarch

of the time at is post-active. The Chamber's petrolise full under those expectal heads. Neistons among its members; relations between the numbers and the federal povernment; and relations What the the Charaber been accomplished in respect o the relations between its members, the industry (said)? This responsibility, of course, comes first, upon its recess in receipt internal subdants and amount button. An excellent example of how the Chamber may serve as an enternal court of trial and armed in "Faretdisputes has been afforded by the sirplant and engine susufacturers sertions. Early in 1930 the decorat specifico between the place and envire manufacturers

arked for a much many favorable discuss rate on course. The region manufacturers had replied that in their opinion this lowerior of their means tuners. Were the plane margalacturers prepared to sauges din observe to the sake of lower engine costs and if an was thus









scrivings, conferences, or shows may be desired, but must sensite had cleared every it was agreed that the existing restricted stopped continue with clicke charges. Chamber provided the machinery whereby this understander could be reached cost valuable contributions has in its insufficience service this includes the collection, arrangement and disserving continued reports, successed and computations of administrative machinery. Periodic bulleton cover mach subjects as treasport and airrors statustics, production and sales reports, Department of Commerce Sciences data and patent courses. Other hellstime comments have to the Array, Navy and Commerce Departments, and under the Interstate Commerce Commission), are issued as occurion demands. Of special significance in the facthat the industry has such confidence in the Churcher that

peactically all companies supply it with complete con-

futerral production and sales reports from which imper-

wave variety of antigements are given the vari-A our committees. For enterple, there is the un-Amerable resolution of widely defloring honear regul and servicing fees now in vague. A proposed forwards distributed to the sirport measures for study and sevicrates. A supersted standard sirrors accounting control also has been under preparation for some time.

In in three way relationships, the Oursder has been extremely useful in the industry's contacts with the toteral government. As a meson of expression the anderstry's resist of view or as a general buffer between the two, it has been particularly provinced in regotion tions between the place and engine engestarterers, and the engineering and regulating sections of the Astoeaster Street Deservers of Consumors The Manne factories Africalt Association, it should be reculied to new entirely separated from the Chumber, and the latter year has nothing to do in second to some females







AVIATION

reference has been record by the Chamber to adopt and For example, the manufacturers considered the practice certain fundamental safety codes. Decartment's proposed defeative of low, or butprovent ends to be incomplete though continion of Afficiary shows have been a bug-been for the manyspecific exception of the size of the markets or the characteristics controller the mingram speed. It was not person that light aircraft be defined as those having a gross weight of less than 1,000 lb. z wing loading of tion. The show problem arone from the activities at not more than 6 fb per sq.ft and at least 4 sq.ft of wing many applicational prompters who copied the feld surface per horsepower. This recommendation was to capitalize public retriest in aviation, and from the adopted by the covernment. Again, the reconferences sufficienties of requests from small, disconnected requested that on plants eignoped with an energy of loss groups for participation in exhibition. The obvious then 100 hg, small fire extinguishers of I pert especity strain from adherence to even a small percentage of these be permitted. This also was adopted by the Department dissidution on the part of the show managers to secure Two give and take, this feterplay of ideas and decithe exhibits against the without of the manufacturer and wan its fight to establish the principle that it could

and would dietate its own show policy, the climax being the New York Aircraft Salon last spring. This year there is to be one large show—this mosts as Derror The Chamber has swang into this year's program with second surplants on four main objectives, increased agreemen in local and localistics sentiers, a sterrowers merchanding campaign, improvement of its own laterand committees and refrequent of its missions with For some time a close watch has been large on municipal and and and for

ind, state and federal legal and legalance trends. A wright support of large proposed and laws advanced has been exposed members, and certain outstanding sterns have been the making of officed series. They the Swetland case effecting the Curtus-Wright airport project at Chreshard has been the about of worth research, some of which is still in propagation. Reprelersey suspensity passed a blanket rate which is effect forbode all suspines operation in that state, received in a modification appointing absorb to advanced to Recogning the reporter airport, taxation and brening legistics and legal decisions are incombine level service. Exercisement of the recent in many age of on a full-time basis and the province of an exhaustion legal reporting system are included. While the Charder from not retrod to fight its muchant individual house. it is prepared to take up the coalgels on cases of general A year ago the Chamber sought a better balance be tween production and sales. New it overcome to tuckle is exceed the various phases of exceptuadrang and sales.

promotion. Fundamental principles are to be studied

and a deficite decision taken on the extrest to which

or operative meries research to practicable. A special

also, with the transport section in the promotion of

retter on energhandsons of simpleses has been sense. mended, and will co-operate through sub-committees

m its aviation accident and performance research. These the insurance companies and the general public, the SERVICING AIRCRAFT

INSTRUMENTS



remires that all air transport aperators engaged in interetate passenger carrying maintain adversate personnel and moderness for the checking and maintenance of firing instruments. In view of this fact, Mr. Tate's article on the methods and procedure for pervious the more commands used flight instruments in particularly appropriate.

A recent Department of Communes ruling

By George Tate, Jr.

HE mayteness and servicing of arrests seeing-With our or two notable exceptions, it is only within a communitarily recent time that those charged with the subsets of these measurest have realized that periodic amendion is recogned by the instruments as with maintenance. The instrumental ourgement of an airplant must be kept in perfect condition, for with the continued allebre evaluer on the sacrements to steadily sucrement Nate Sinte in thick wanther is neglible only with the how article we will outline a few of the necessary tests which will assist in locating trouble should it occur, let it be evolunized that a little time given to periodic impection part. Co-operation between the pilots and the instru three demartingers of the waters in want valuable and name. sary. Each is indispensable to the other, and if this view

terest is raken the ormost benefit to both will result

To endembe entrances serves secrets, the serior most provide roeld with the measury calibrating and test tory and workshop. The latter should be well lighted and from from vibration from any ediscost shop correthe service laboratory. These must always be kept in first class shape ready to substitute to un services. Eather then make a berried resair, a faulty instrument should be removed from a place and a "speer" switched in its place. The necessary repairs can then be undertaken in a the recentary repairs can then be undercases in a thorough manner, and the sustrument fully checked and

tested before being replaced in the plane.

A competent footrament service rase must be everaged by the arrive to magning the instrument department Much core aboutd be executed in his selection, as the propert Armond for combined personnel exceeds the state seess, and he canable of acception responsibility. As the chief of muretource. The subrament enriceer quart a nationers space parts stock to that the possibility of a Substitute delayed through matriagent fagure is corners All priors should be required to fill in a form at the end of each run, lating any inscrurances or fatheres solved The forms will then be named over to the instrument reserves, who will make any necessary educations or resiscences before the next men. The filler is of the focus in no way obviates the necessity of periodic issuesbetter. It should, revertheless, be recovered. can conscribintly be made committed with ember ever-

hard, which generally takes place every 250 or 300 hours checked for calibration, wear, and appearance, whether

the common instruments follows: Tachometers A trouble, and does not receive any other obtained than the occasional renoval and greating of the inner drive

tive, shough less adaptable to measurement ing. Changer rates and better reven from the insurance

Relations with the law prouges with adopt the start your erarwests and the general public bare been very affec-Issuerance, that great stambling block to the neutron of exterior, is one of the chief museles makes this band consumes are desired by the sylation operators and the present public which sught use aviation. And, since traditional conservation and the lack of knowledge of armition accident conditions together are resonantly for ber's energice committee and transport portion are compline complete, accurate statistics each mouth to pro-

were to be controlled by the experiment from its coars. The conferences were excessive occasion. Then

were carried out in a spirit of op-operation and munual

sympathy important concessions were made on each aide; controversial ground (troublesome in other years period over harmonically; and the veviend requirements

1. Promolgation by the Department of its proposed

perinten to the airworthment requirements and submis-

manufacturers and reflection of their reactions and suc-

sion to the sussefacturers. 2 Consideration by the

pestions by the Chamber, 3 Conference of the manu-

factorers' person at Washington for consultation of

of the Devartupent stating concessions or explainance many

to the manufacturers 6. Consideration by the section's

Department of final status of points in question and plac-

inearly. It is but now approaching the tree level of its

effectiveness because of delays in masterior the over-

atters to the Chamber's program. In the late Autorior

transcer arrangement range seto has the Assertion

Air Treemport Association was absorbed ,and the sec-

non parcel as impressive monestars. However, this

industry study, particularly though its annual conference.

It co-coursed with the government, however, to such

events as the holding of sprinkler tests for hangar ares

at the Harran of Standards a year ago and in the study

members previously unconsultance with the Chamber's

The transport section promises to figure very prom-

during the last ore months of 1990.

ing in effect as of lan 1.

Should the hand fluctuate, investigate the following (A) become the shaft installation for share bend In no year should there be of less than falls sudies (B) See that the outer cause is well assurated and (C) Check for friction by loosening the shalt at the

fastened to the structure so ther no part can velente or motor and and provision the laner shall such the fernor It should turn fresh without hardone during any part of (D) If excess friction is present, looses the fetting not at the techometer end, and test aroun for friction (E) If the shaft envelope fronts when discounted (F) Occasionally an matragement will be perfectly steady but appear to be definitely at every. The first name touler engine. This being the care, the instrument is probably not of calibration, which can be determined by

Pressure Gauges O it, and ded pressure gauges are surremarky of the Boardon type. Both are of gross importance to the pilot, as may drop us ed or feel pressure below normal se-Pressure gauges require no other maintenance than the revener trapection of the connections. Harely, a leak will occur in the instrument at the point where the Boardon take it soldered to the convertion hase. This can be repaired by soldering: Should an entrangent be thrown out of calibration by correction, a new graph is the only recently. Wi subjected to excess pressure, the Reserves acquires a perrangest art and will not hold its rallbration. The callbration should be checked periodically on a pressure many

Thermoneters Twell installed. The capillary take should be well inped to the structure to seesed swincing or bloke. In

on over should the capitary be out. Any source bearth Thermometers may be tested for accuracy by respect. ing the built in water which is bested slowly. A standard

Att. sircraft akineters are at present of the bercentric metric instrument has definite builtations, due to the charging berometric occupies. Aligneters are reliberated of 29.92 in al mercery. Atmospheric conditions are others cause on arry ten occusions. to constable by a know. The restruction should be use to Altereters are ensured self-contagned and should give At the time the periodic exertered taken place, the rate

brazion should be elected before replacing in the airplant The recessory test equipment for altimeters consent of a second moregraph becommer with made reliberated on councils of feet; a belt par; base plate with prience valves; and some means of everywhere the new other a hand or power section pump conduct of the corregulal hardwater saided. As irrespendent mentioned, the auto of the niterator scale is 2992 in of conserved of the abteneter must be so set that when evenue alon n commenced, the altimeter hand and the mercury At this posts the becometive scale on the altiqueter should give the same reader as the recovery standard The presence should then gradually be reduced and rendmen taken at 1,000 it, inservals to the family of the efficiency scale, at which were the base value to consend and air allowed to showly re-enter the bell far Again

the readings absold be noted. Tolermous can be ob-tained from the tracerfacturer. Beyond this nertialischecking, the ultimeter should Climb Indicators



Tern more recessly denow event to be regarded as one of the most valuable side one of the recent little commenced of two units, the redicacor and a thermally involved tank, the two being connected The operating property of the sewrement requires that it be vested to a region of provided in the rear of the places, particularly cabin shape, not subject to peculiar

coce-pit pressures, usually

AVIATION

reviewing leaff in the climb unicates by a memorature descree audication when the plane in part from a climb, or a dight up reading if the throats is mattenly counsel The remedy in both cases is to attach a users of reliber tube to the west at the year of the industry and explore the cable or option with the free and for a region of cutte creasure. Vented to then place, the church indicator well function correctly, and a permanent installation conbe made, replacing the rubber taking with conner leadant the sero position of the hand may shift slightly after the instrument has been in service. The hard may be returned to its position by means of the zero adjusting

In checkage the subdention at the overhead periods, the "IT ax heart of the turn redicator is a small air-driven sitemeter test equipment plus the addition of a stop watch eversome which normally revolves between 5,000 whether the equipment plus the addition and 10,000 spen at a raction of two is, of secrety. The For descent readings, place the climb indicator and tuck in the bell up and oversee the vaccoust range until the carroarial barometer reads, let us say, 6,000 ft. Watstep worch ready, open the valve on the bell per base and recorded nor floor gott the climb indicator band shows a standy descent reading of 1,000 (p.m. Makestinian this uniform rate, start the watch at the leature the reserves column of the becometer passes any convenient reference mark—let us say, 4,000 fs, and time the interval that is takes to deep from 4,000 to 2,000 ft. During this period the antenness hard must be knot steader on the wrote. becomined rate. If this was 1,000 Lp on, the tare interval for the 2,000-ft, drop would be two minutes for a perfect



Californian of an abstract-

instrument. Assembly, there may be a shade difference is the calculated and indicated rates. The columnous should be obtained from the manufacturer For "me" readings, the seet compressed must be note mented by the addition of a container in the line from the variance comp to the bell say been. The free landson to and from this must be provided with shot-off valves. The actual testing precedure in the same as before, except that the container ment first be exposured without everafing the bell per. The pressure is the bell for in then reduced by expering the valve in the lase from the contwiner, and the interval rissed as before. Tern Indicators

damping and sensitivity adjustments are made at the factory at this matter, and of treeble with the entranged in experienced, should not be altered peopling the traumbyallies of every other source of trouble Every hundred hours, the air treate let on the hoursement should be inspected and cleaned of any foreign There is just one place to oil, on small hole on the right ride of the lastrament. Sex drops of oil every 300 to 350 hr is sufferent. Wifers of is reconservated If the instrument develops trouble, the following from should be elected. See that arrang marker is being obtained This can be assured by meerting a "P" the line or the influenced and connecting to a manuscript, reafens raches of sucreary or water. As before strated correct section is two in of mercury (26 in, of water) If the value is not obtained, the entrument will be shop goth. The following points should be exactional (A) Venture must receive an unobstructed flow of air. prederably in the all petrone (8) Axis of vectors west be parallel to the line of (C) Venturi and connecting line must be clean and free from dart, oil or other obstructions. Connections must be right. (D) Venturi must be as close to the instrument as

percible. The larger the pape line, the more fraction

(E) In each weather there is the possibility of ice feeting in the vacuum threat. To profit this, a leastion near the column pape on an extension is no be preferred

there will be to impede the air flow

The instrument must be mounted so that it is vertical on necrosal flight, with the held in the course of the dist Turn andrestors are tusted for sensolvery by mountain there on a stand which can be reported at income state of speed. The instrument under test is mounted on a rack next to a reaster and both connected to a line bayer a service of 2 is, of mercury. The rack is then turned at a known angular velocity and the hand deflection of the Air Speed Indicators Data air speed indicator is a sensitive differential pressere garge. It indicates in terms of arr ment at any level the pressures receiving from the flow of air deat the

pitet-state take to which it is connected. Connections between the pitch-static tube and the reference are made with copper taking of A in, oranide dispance. At the lowest posts in man line, drain nor are moduled. As air speed indicator requires no alliantion masses the periodic removal of the cap from each drawn "T," and the drawing of any water which may have accumulated. More air speed sufficators are damaged by being blown into or racked upon than as any other way. The recess or mattine required to secure an andication of 120 and h. is only about six m, of water pressure. An ordinary person can exert a large pressure of 80 in of water, and one rock about twice that amount. Thirty in of premare evelied to the print connection, or the same surface scaled to the state correction of an air steed indicator. will demons it on an to make it could for one. The owner bilities of damaging as air segret infantor in this way are very evon, and extreme care, therefore, must be

Treebles with air speed indicators become accurred m three different ways. First, failure of the hand to return to seen. Secret, increment ment indicationseculty too low Third, singuish movement of the band and failure to respond quickly to changes in speed. The scorce of the treeble, in any particular case, may lie in the inchestor or may be due to leaks or stoppour in Recorded at the deficulty, the first step in beautier the source of trustle is to discouncer the take lines from the indicates. If the treable was failure of the hand to return to sero, note if the hand corper back when persir. If the hand comes to seen the trouble is in the lose. If the hard does not come to zero, the trouble is in the indicator, which should be reserved from the board. One of two things may be soone: Weter may have found its way sets the displyages, or the daulteness may have been subjected to excess reseases. Management the indicator to an to lot any water can set, if transport

inside. If none appears, and the hand continues to

the instrument is of the proper many for the arrelant

remain off seco, remove the macrowant for repairs. If

AVIATION and by excess pressure imposed in flats. The small rease of such departs in to be found in the existence of this instrument by some careless person. If the hand returns to seen own disconnection the leave. the trouble is undoubtedly due to water in the laws. Low readings are usually the to leaks, and sluggish ness to storage in the Iren. Test for both are saidly reads: First since the instrument is now disconnected try the indicator study for leaks, steepene or triction Attach a length of rubber tabe to the state (S. consection. While carefully wanting the hand of the sir would indicator, such very weathy on the end of the rubber taking until the band reaches about one-built of the full range, then close the take by parelying or lay perfere the tongra over the end. The hand should stand still or esture toward over more should be should not travel over 10 ms in the scale in a shorter time then 30 oer. If the hand moves faster than this there

is a leak in the case and the mannesses should be processed. If the movement of the hand in within this have, the accessorance rate should be noted. New open the rubber take, and note of the hand drops back quickly to seen If it does not, there is a stoppage or excess friction is the valuator Assuming that the indicator showed no leak in excess of the limit, and that the hand dropped to seen as at should, proceed to test the take lines for leaks and stop-Connect the pass live to the state side of the influence (where the rubber tube has been during the previous test). Slip the rubber take over the end of the part take of the pipe state take. Here average watch the dial of the indicator. Such perely on the rubber take, brying the observer stop you when built scale is reached. Close off the rubber tribe and have



Compressing as adopted company

weather misss say

pleasested by a nero

micrate correctly

This confision is in-

when the others in

If so, a leak is indicated. Leaks are almost always at error as at South. New head the plane secretaring icines, although sold takes are pressionally found. The breakens tean the line at each loust and committee, the leak rany be located by a process of elevisation. After the line has been made toght it may be tested for stouceases. Such on the rebber tabe as in testing for leaks, suitl the hand seather half-scale indication Corn the tube and note if the hand drove back to some quotidy. If not, a stoogast to indicated. This may be located by breaking into the lase and retesting. The same process of testing for leaks and sappage ear he applied to the state line Occur an sur speed indicator installation in property made, particularly of soldered metal connections are used, is should been for the life of the arrelanc without was attention beyond the occasional draining of water. If

it may be quickly SCRAFT COM-A passes have subject of abuse, day largely to unfamile arrey with their inbecree limitations. A corross carnot be course in obscure



stalled in an appliance. Present day machines employ such steel and iron in their construction, which becomes congruenced, tending to distort the earth's magnetic field The effects of this distortion, except in extreme cases. tion. By compensation, the effects of the distanting Engletic field are neutralized by introducing englection of the epposite polarity in like amount. As each air-Name (grown of practically simpling type) many he decomposed in a different arrowst, indirected compression is abushely recessive before the concess can be relied mose Vibration and other factors encountered in service also here the effect of changing the magnetic properter of the place, reconstraint recommensation every

three mouths or thereshouse The reconders in an inflower: Describes dissertions by menne of a pelocus or a surveyor's transit. Place the stralage in flying position and head due North resquete). If the compass does not read N, turn N-S emperator screw (with non-magnetic screw driver til compass does read N. Head the plane due East respects). If the compan does not read E, turn E-W compensator score till correspon deen read E. Head the place due Sewih (engretic). If compan does not read tern N-S compensator screw to remove half the error.

60. 90. 120. 150, 180, 210, 240, 270, 300, 330 and 340 deg , noting the company reading for each heading on the correction cord, which should be fixed near the comcase Do not artempt to remove every greater than 30 deg by compensating. If the errors to begin with are grenour than this, a new location should be found for Companies must always be kept completely filled with liquid. Where the quantity is small, clear hercome can he used to replace any liqued bost. Never use absolut to a modern alcoraft corregan. Skuggishness of a compass may be due to weakness

of the magnets or to friction. With the steel now in use. loss of magnetons in very care. Frution was be duto a dell pivot, a cracked or broken jewel or to contact of some part of the sensing element to some fixed part of the compan. The period or awinging time of the company card is a good indication of its condition. To measure the period of a compant, reveree the compensator or creapensating respects, place the compass on a table and uces its reading. With another reagnet, pull the used second to a beading 45 deg away from the correct coacing. After heading in this position for a few seconds to allow the licens to actio, withdraw the empter rapidly, starting a stoo week so the same time. The time should be taken from release until the correct graduation passes the letter line and compared with a table of periods from 45 deg. defection, which can be obtained from the A compass which exceeds the maximum allowable time should be serviced for some defect which rejets country

the singgishness. As a further test, the card may be deflected 3 to 5 dear to either mid and its action noted Priction will present the card from returning to its preser position It is very important that the field strength in the room which the compass is to be checked is determined. This is done by taking a communication a many respective location (parks, fields, etc.) and determining its period es the location. A correction should be worked out for the difference in period in the location beviler corners field strength, and in the test room. This is cents uncovered, as appreciable differences as periods have been If no fraction is apparent, either in the form of a cracked jewel or in actual mechanical contact at some point other than the pivot, and the trouble still extenthe company about he returned to the factory for repair.

A Word of Continu passes in no substitute for experience in the purplaine of sixualt sustruments. The few susyminus reads here can in no measure hope to make it possible for an amateur to take over the responsibility of keeping as sistency instruments in condition. If they have several only to bring to the attention of the operator the nature of the subject of instrument maintenance, then the purpase has been secondished A word of castless should be added. Already instruments are fee mechanisms. It is practicely a universal rule among the malors that if they are taken apart, all

narantees are vool. Any service work on the part of the operator west, therefore, be undertaken only by personnel capable of restoring the instrument to proper

By C. B. Allen

for that matter, on those of divergence of practice and www.merchestant.na. regards cabin attraducts on large strelance Punhabbs sengers, a subject stell very much in its experienced stages as a whole First of all in an attendant of some post abound a river m flight necessary to the conduct and welface of the passengers? If the seawer to the question is in the si-

Finally, and most important

should such an execution

consider and at what regat do

ind what service

An appropriate system of an assistance to those who



stoners of sarphage attendsers one of whose derives in tion of girackness, being so overcome by rough going that they had to be looked unnergers, while by their own example they surpred internal diamer among others of their charges who were surprising that there has been much difference of opinion as to the desirability of airplace attendeds Airbon corretors don't seem able to serve even on what they shall call such employees

Aury o has been decided to

was been been called over

whether a groce line should

weightier problem than

the Chart Discontant and

one relatively obscure and

the fire of flight Theo

out for he "serial coeriers," by "flight companions," by services attendants." by "rabin hous." or by much

Lakes to the Galden Gate by selecting years; weeren for its stuff of simplese attendants and calling than by the promit but practical and sufficient came of So for this experiment seems to have worked were well swiend: far more setalectory, in fact, than on the is by no means solely due to the fact that the eigh chosen were allesetive and that attractive girls usually products marses of proped capability to rater to the wasts of those who ride across the Hockers in the comname's event twelve and eighteen-consequer tri-current and the reason for picking surses was not with a view to their xunitability in possible accidents but became tratters are trained to discipline and accommend to budge after the condent of others. Besides, their experience

condice them to tell hear worth execution a reasonance

Economic processity temporarily has answered all these "stewards" who would have to contest themselves with questions at a single stroke on several of our descention the referred giery of an aeronautical-locking uniform. pirlians for chains away with the fight attendant altagether. This move followed the sweeping fare reducpoyation on its day-and-night route from the Great from the total on many American arrives should a year are as an attempt to build up the volume of onearrows formed by air to a point where it accepts to protion of high prices and few passengers. It was looked error or insurable in the susceed achieve of extraordinated not only lowering the overhead but increasing the passenger capacity of each skip. The air travelling patels would have to shift for each As a matter of fact, in peweral respects, this worked

so herdrito whetever, for a great many airlies petroses much profer being severaly let alone while fiving to received courtee assessor from a giorded and frecumply over-analysis agrid deep stemped. More than control of the territory and the second of the second meant cofference of an airpiase attendant who increased on shaking his "face" set of a consecrable dore to point wrally sends and how much he imprison he receive also

April, 2722 how to give that attention calculy and efficiently as well vasarinary woos. Nurses know how to handle the public

with a certain finance that is indiscernable when dealers with a group, most of whom have suddenly been transclusted from solid ground to a strange undean which they married fear and discout densite their deterescution to be modern and att-minded For several months Eastern Air Transport has been Westerston section with great satisfaction. Five are now employed but more will be taken on when larger closes are restailed on the neathern acrows of the last This company is making a special bid for women owreserves and bootstone courses the special and the processors desire for the correspon of seather woman on a flight. There has been a definite recrease in the volume of are perferred. Two of the remove staff are areatons

olies. Each sixt is flown over the line for three weeks as a passenger to fundament ber with chief assests of the operation and her ich before being given the official blue uniform and sargned to a pinne. She is expected to be able to electify interesting landguarks along the room, report the place's speed and altitude when such information is requested and serve light refreshments O see sicking, that does considerable over-water flying and consequently insists on rigidly disciplized and thoroughly trusped cabes attendants, oppositeably has

put these employees to a nevere but practical test after sir rafts, expected conduct in an energypoxy, etc. While creases for out from shore with a place-load of such conditions for necessary beetle as serial cable bear an course suddenly courts and dee, the skip goes sate a office treated the sea and a tense-fored excelled hearts the we. For one of his first acts was to own a commer to come down in the water. The thing is so realistically kitchesette-like ber and begin serving drinks to the

that so one suspects a trick and the real reaction of the urious hors to a audden energency is thus obtained. It is a tribute to the previous tests of selection and releasure that no etterators has yet less has boad as then test, though picney of them have lost a little color. Per American Airmont has stock consistently to the cable buy type of aerial attendent, mainting on alert and good-looking youngsters who are carefully traced in are to do so an emercency. This common a plant wast they a crew of four; cabes how, pilot and co-palet and radio man and the attenders is considered to exempted to its regyice that it has refused to discesse with him in the face of defeately inveted loads for over-water operation with land machines. On its Selective amplitudes Mugni-Namus rue at has prose in for cakes have of the justicy tell top weight and type but this is the coly On the New Product and Western Alconomy which

operated during the past surrose from New York to Albazy, Springfold, Boston, Hartford and other sunboard

otten, megro Pallman porters were used as cabin attendcets with year court results. The corters once there overcame their nervoussess about fiving, were tremenof service. From the novece passenger's point of view fundar atmosphere of the Pullman car and made fiving European authors apportioned have a cable attendant and sometimes do not. Ordinarily they seem to consider the co-paint and radio operator capable of coping with whatever wants mer arms awarer the passengers and let it go at that. On the Imperial Airways de laxe Professional service between London and Party a granted cation attendent has been provided, but the necessity for

Arm and fixing to new an experience to the morehouse therety. And that, of course, is no job for a print!

Transport and Engineering

THE USE OF THE RING COWLING



figure beat is very smiler to the one employed on the Privateer. This moplace, but there is no data available as the moment to indicate its effect on the

AVIATION

of the second state of the conting on curber enques will be as great as those choiced with capiecs and population of the tructor type, but there is unferent endeave at hond to indicate that a sense. side designati conduct restallation in worthy of consideration, and that facuses experimental work as this direction in tention.

The may nestellation on the Lorning OPERATING AN AIRPORT HOTEL

AT A PROFIT

eylender head temperatures dropped ap-eromerately 200 deer for addition, the

exhirant collector reng, a sheet restal

cord surrounds the cylinder neans. It tapers to a disputer lies than the over-all engine dissector, and the recky losses proped to the opticle through

openings in the about. Smide the corel deflectors are installed to direct the gir

Pentur saptes of Public Put

has been reported that back pressures were very sentertally reduced and the CHOSSIBILITIES for profits in the ray is advanced to the agreed administrying helding and depot force the flying feld. The suspers is about the flying feld. The suspers is about the said of held makes south of the City of operation of agreest heads are charte those by the experience of the manage-ment of the Airport Ian, respectfully examined at Oakhrid Meascopi Air-port, Cai, some July 33, 1959. The book was entiblished by the Internate Company, at a line when gary arrange their processors were being disquand. To and a hely many south of the cay on California and agreen Sax Francisco. East francisco the city of San Disastico. The ground transportation facilities researching Oakhand Assault with the major metropolitan centers of the Zundate it is the only remains best lange. Francisco Buy area are relatively peed and it was thought that this employer dide it is the only premine been oper-used on any first-class American sirport. would encourage our travelers to stay at The College arranges of the College Section 2014 and the College Mercardol Argorit, at a sent of 120,000 and was beautiful to the interestant from the work of the College Section 2014 and the Argorit College Section 2014 and the Argorit College Section 2014 are section 2014 and the Argorithm 2014 500 the fitted and divining faces. Of live primarily, and also be already primarily, spend, madern construction throughout, and to come extent to lead newspoonly, the two-story boyl halfding contains 20. The response from painters of the divinities of the primary latest record and is drey, with the divinity leads was most disappointing, basevers, reconsiderability. Exception of the balls on top of which two of the air transpoon here, strong the port when the local was deven deld business has made a pro-operad, altitud their operations to other older, an conjunctions with careful plan-iolds. This measures left the head every, to maintain the head on a squeez completely derved of partons problemble laws. At this time Mr. W. R. Shakin, the recent manager, was brought in to make an analysis of the problem. As make an analysis of the processes. As locations of the below, not the utreation a receive of the membras it was decided of such a project as a large mentional to concentrate on making the heart a surpers, it has been possible to arrange "locate" for the adjust personnel, to a great member of appelling persons. ducing employees, pilots, and flying cluding emproyees, pitchs, non syring moderns, to make a strong appeal to local town-people, especially for restaurant trades and to devote but alight attantion the refer the nationage has been back up until it has been as an energy for the part nic months of more than 60 for cost, ill canasity, and the board in deficiely on a paying basis.

The results of the experience gausset with damage presented in the boost by the management of the August Inn. or in Strange Personnel in the boost by the management of the August Inn. or its Strange Person. A midstanded presented.

Airport for marial rates for troops and

throughout their training person, two serveying each room. Thu makes it occ-

er me tent or student rates broadents arrange for needs in the boad disting room on a flat mouthly busin which ser-

ness three times a day. Although the

rate in very low the hotal is able to offer

a house of the large and request returns of mesh served under this plan,

in laws, or spend their work man in home, thus considerably reducing the number of people per month served each reofers. Similar low steep are offered

character waste. Another factor is

then them to enter southwar on

large volume of humans obtained from local transpeople. Due to the sensus burcheons, attenuous trees, and evening discrete, 12 cracks but, and evening discrete, press by various clubs and ar-parentines of Oakland and survening town. This has been promotion without in any way toward the bond into a road boune or night clab. The reserved nethodies of Calibrat base memorphi negocitive of Onlying have have eased struct to the enforcement of rates mader which the hotel is perber of local people personne the bund opening is not a being various for an event end present the hand parameter is not a being carroom for an event end greater, familing the west as slipter hotels, at least for the passess. as "making," and an opportunity to The means as that the vigit majority of break, mony from oursemblood me-The meson is that the vast suspirity of break many from overestional mer travelers are as a heavy in reach coinciding and to apply activate approximate destination other than the autport, tone without samilating convenience of Ulaire the plan new in effect at the consist. The trade has powed to be



he we of the bond is small authors and for their convenience as least one and pureally two cooms are singlethe mosts of the experiment by the The receipt of this experience of intime, clearly melecate that the gir-bond has real await consultation. hord has real pount possiblered, no not through entering to air passingure if organized to sever server employee and shadows premarily, and neighboring a substantial item of mesons and in being bealt up stradly, townspeople is every may penaltic, age

Kibs for wings, allerons, elevators in, are built up of individual reliably of

title, and both up of individual column or recoding channel ageton, fastment ages gether by spot welding. Seculors aged stray, cold colled to very kept treasle straights is gift in seasable worths and the

neon redom are formed by drymen

All manager represents make care, signature this for the hold to reader a profit over SPOT WELDED ALL STEEL WING CONSTRUCTION CONSIDERABLE interest is in

menularity or are conducted mortal work in the threaten.

then Floriwage, Inc. of Exposentic Field, Long Island, has been mercalitate Among

"ONSIDERABLE interest is in completed the construction of their fire



that many medicals uponed their everange manufacturers are conducting appeal in 1970, or sevent their work ends as morely work in the conducting appeal

The redicional rib mumbers are then specially designed press and dies. All des press for a rib assembly are classed jets a lay and all marts are remarked of this tree spor weading. Ensisted in an alteron rib and the portion of a wang rib, for the "P-ines," built by Amphibuon, Inc. Roosewik Parkt, Long Interes. Recovered: Field, Ling Island. The resolved of freshing the truling edge of both wing and absent to clearly shows, as well as the method to tour and the aderon rib to the torque rebe. The cheed members of those assemblings are of the section Emerated





nomed by handing the rib to 50 per cent. Full details are not yet available on of its design fixed and simultaneously the treatment of the all-stool wings. It vibrating this space protein through one has been reported, however, that it is of suspinsable of air as, for 10 hm. Under that canalizer; trays, tapement both in 1100 vibrations a size and centure, and wraplate 2 reinste at & ix anaphrote were applied for 30 hr. At the completion of this less, the ribs were recent a many lead per sq it, complete with all fireign, and labor, covering. Ethis are of the enstructure described above, and the beaute. and it was reported that the full go lead was reported that the full are built up from stanlers steel sheets upor welder throughout.

Flying Equipment

THE DOUGLAS "DOLPHIN"

N the "Delethic," the Deselet Air. In the "Delphis," the Douglas Art credt Company of Santa Monica, Col. des for the first time in its birther nitypiene designed presumby for con-equal use. The maching is a twin-glisst amplables managinas designed owner but also resultly adaptable for me on commercial surface and for The single tapered wing is of full gastfewer construction and is mounted directly above a control half. The power plants: which consist of two Weight 20ths; propose or control.

total eres in 48 and by cripton are carried in marries or the way being well forward of

the leading edge. The tail puriaces are succeed by the stern of the built, the far The ease wing is built in one panel tapered in plan form and shekares, and being an integral part of the latter, and the horizontal stabilizer is carried by the emberly of wood construction. Source art of the bus type with spread or art of the bus type with spread or are stress from The are of playwood in trees from The wing is covered with those ply appear. external bracing is a pear of tubelar stress running upward from the stress sout to the pear stabilizer year. Associary welded stad take Associately wender than the command or posits where the engine and orde are the design is the small sampling arrior across the top of the two engate acroller mounted. Two 90-gal feel tests are across the top of the two engine nacoline whose primary purpose at or smooth out the airflow in the vicinity of the power plant. It is of full nastilever all wood construction and it.

The Course Widoh Chaper

the center section.

Color arrangement and decorations can be varied to out the indeveloal perbe setaled, making the total current he metalled, making the total carrying capacity of the simpless eight persons. The manhous is considered bounded for testalistics and all metroment hourd and eater lights are standard. A rull set of engine and environment res on of engine 200 navigati irreports is provided. The general specifications of maked by the magneticioner are: Majets over all

AVIATION

The retractable hading guar

above the water line, but are well-brane from the sir pireum.

a hydronic shock absorber mut, in heaged to the hall borous just forward

of the year rice and carries a larger

Wing tip Souts provide stability on the

The half is built enterely of dural ment. But obsert and open channel sections. Eggst truss feasible is used from the

broken over france to the ted skill but have and all of these powers the half

brough two natoriesys, out have are us

members are bodied or memed waterfacts buildwade decided the ball materiagis todabrods desided the but internity reto seven updatadeal compart

contact show with a hardward sarder

Ting short at the True great tend 1 500 to.
Wing treating 15.5 to per up.th.
From treating 15.5 to per up.th.

CURTISS. WRIGHT *coneé*



Title possesses of more-spar con-struction for simplese wages have been deceased rather widely both in the United States and shroad. With bethe Bull 'Bull Pay

respect tone the

creating interest in all sorted designs. In covered with doped fisher, the displaceper wing offers sufficient and speculiarizers on furnity advantage so that a well probably be manufacturer are as follows: were excepting consistent among nature. Excepting to the future. Recognit on. results applying the best made in Wright smale The space are of wedged chrome molyhdeness steel taking bath up as the form of a trusped girder assessing from the bashes orige as the control-trus-Power leading eers point. Stresses are carried from the rifes to the girder and thence to the invelope through medial fillium, and CURTISS-WRIGHT "SPORT TRAINER" reserve totallar streamfrom streets are

of the hundage. Conter of persons trend in bleeted by the selection of a wing section having empty four

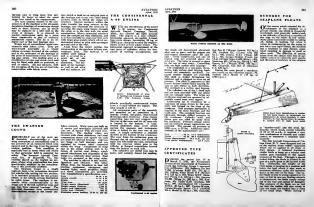
midplesses and richtig. Wire beam are noted rectangular sprace and rife are hammed sprace of the trees type. Feelings, were and almost are labor system and almost are theret protect to leading edges. The recognition of the rectangular a combination of Wins area . Weight require Oreas Weight

ON THE BUIL THE PERSON SHILL PUP-A N interesting new light virplant to the formally introduced at the Detroit arroralt Show has been amounced by

equal chords and space, night positive shades, and marked positive singger. Current doops practice has been to-

middleson steel tobing. Were been

the Bubl Accept Conguns of Marys been christened the "Flying Bell Pup ONE of the exect sequential country for the school operator, or the private sensor in the selection of all is a med-rang ungle-place messoph numered with a 45 by Sorbets one is greate to the assemble of a Ucentions for the school operator, or powered with a 6 by Suddy enjoy, by assembly the second of the school of the school



AVIATION enture is enficient to away the black out of the way so that there is little What Our Readers Say emosthy down to the turds-deck. The streamhening of the design is excellent, and the fact that the enclosers adds 2 to mode the cabo fairing behavi the rear buildrend is saffaced on an additional buggage space. Access to it is guess The redders of the two floats and the fact that the executors note a to coppage space. Accounts in in gained 3 mpth, to the top speed of the monthing through a "apper" in the rear not in path of greatly secretaring the head rest. to spite of groudy increasing the lessing executive of the less due to shap of the less due to shap of the mount of the less due to shap of offer zero up to the redder pedals of the surplane, at which pedal they are con-sected to the tenal moreous respon-Pilet Life Insurance incornece companies man, is the light of chalatio new anniable, charge more and the state of t RETRACTABLE To you Server brough spiral med springs which cargos spaint litture of an redder control or errorent, and pure slewly, also that In your February more you have on the entire accesses in approximately built, and when reconstring the markets LANDING GRAD STREET they over a greater duty to the average body of policybolders than they do to any average who, with some lack of has been of the appearance of a tare leasurance" which is peobably intended to be businesses, but curtainly does not racing events and within ten murator after the field judges had turned in the results of the other contents such in These seaffary rudders are realistic DEVELOPED to the specifications of the Dougles Assertit Company for one on the new Todalon are parts are of duralizatio substanfor all types and since of Ects finate and add from 7 to 12 ft, to the total weight of the covered stellation. The stitude ing to get standard moteunce without poying that extra premiure which has tially featured paretter with rivers and the securious devening the books, and the glass is of the nee-shatter for one on the new "Dalphen" anbursting, the beesh dropping and dead-sized lending, result shorts were made ober, and the grant is of the nee-challernext can be made in a relatively clear sems without special tools, and without differs any holes was the body of the excels are permanently increased in the hier off the emperium facts, and heavy available to the neess and to the au-In a spirit of fair play as between one on felt groomes so that they can be ing him to east with the case in a proper way whether the applicant is subject contribute many also appalated for such Scytistes as the assigner Sigher The main part of the homing entend. It a a holders; the others and devenue save only the day of sering that the charges between the various groups are pas-and fair. A good apert, whether in a vasion or in submarine days, will not tors more uncount hanges to \$1s. We have specialized in aviation basers for ceveral rears, and know. For exknowledge of the event at head then the regular necounter might be exrear buildhead in arranged to range open sin) care used to taken in blumming or beling, as the redders take care of temselves by folding up out of the way the service of the service of the service On brigged to the upper long-root, and such America. Led current one-ball of the roof section for gameral hinged to in upper edge. Eather, or myphilism can to either our to shout 50 our 1 000 the entry pressure which has occupanted requires and will not try by concent-rent to get the letter of the other to priorit run to Houst 30 per 1,000 per annua on the average. Some trues of pressure, on apprecia record showing COCKPIT mints firs a stiff erester hazard, notes bullet fleddern an has commany held note pertines with the proched ENCLOSURE were in the father of the authorizer of a actionic ailer the entrant crossed the limited less. Official course of most counts were within a very few memoirs there made available to the press and United States Life Incurance Company. the faneture. A smade and effective accompanies which can be figures are available; eow the com-panion allow for or ou passenger fights in a year without cross pressures ORDINARILY at it a relatively easy operated from either reside or operate The Conduct of Races reneral classifications of ones cock Considering the completeness of the enclosure, vision from both south in remarkably good. Ande from one meral cuantegroom of open cook A sean who is in the avustice inor sales type. The use of melepit en-sures of the nort recently designed on Referring to your article "After-thoughts on the Rases" to the October timer's steed, in the control your regular two-place rackis, will make the deviates accurately starte difficult, box become a plot) cannot expect to get the prompted on the same terms as on average healthy man who does get troop may enter liability, or who fiss tame of Aviation, I wish to take the apportunity to sail to your attention certain features in the hundling of the Master All-Attention A. Earn when division accuredat more difficult, honthe reproduction of famous parame verted from one type to another or and its length deman represent in plot and pasto numeral for those in the avisants entry to look epon the hourd in ht. After all these are 870 other senger condoct to water weather, a The public address system at Misses was an employed passible to the refer-nearon being described from a management leader at the press of 164 le. car of a thousand who survive each The cockpit beauting as designed for the Pleet can be freed to the sarpines the fact that from the life insurance company's standpoint there are 30 per 1,000 letted and the Title Insurance stret when or with no changes other Can the remove 1,000 leffed and the life insurance company mant therefore charge not from them, but to fittle more than, \$35.00 for the amed to cover the flying hanned position, and a total movement of 204 in.

Operation, of the hydraulic most in
hy means of a hand contained some mounted in the pilors cockpit working in conjunction with a two way volv names of glass slope up from the top used in describing them and the types of slope in the air, but suffer the an-possecer resorted to what regist seem to and a Signi, source tank. Each save which the insurance companies have though to keep in mind-mil they more of all for retraction and one gallon extension. Strutt are retracted about a mirete of hard tensorar. ion industry authors restriction he way afterwards assume seath more hererform deries (such as piloting Figure) and the seasonage commence about a minete of hard presqueg. For tourists in almost completely augustice, Eigh stree in designed to withrand a studie load of 11,000 ft, has an energy shortypeon of 35,000 ft,th, and will withinsted a measurant compression lead of 41,500 ft in landing, or a hydraelic pressure of appropriately 5,000 ft, be-requir. All street are designed to carry leads tourists and control of the leads tourists and control of the of the control of the SUMME PROTECTIONERS

desired regarding the difference be- consensus actually seared to start the accounty starting the race. public through the public soldress system of the fast of exteres, only to had it ser's stand and from there dissenuser's stated and trees there consens-used as described as above regarding the monhome starts appeared to be the setrants for each creat, it was found that as practically all of the very substantery and covariety made the sheed course events extremely enterest country should be seen to be a december to be seen as the second actually lead up for the second to be rece. Some presentate second to be secondary should be seen to be secondary should be seen to be ing shore the police and on the mail remains to be does to make the rate otherwise for assuring the start by all estrants except those who, through nerwission of the Control Committee county care mary extension to the I believe that the handling of the Muni races in a large messerby virtue of extensioning circumstances, are expand from the races. It seems A. J. Unexample
Director of Automotive Acquities
Society of Automotive Engineers are expused from the races. It seems highly understable to have a large num-ley of every blocks (Red out unless the

New Volumes for the Shelves

ment or take typecomary risks but seen, to hose his job. The print who is any way above the abginest indeeding of " * " lack of ranged for his com-justy's policies or distensity to less macrosse ment be disabayed immed-COMMERCIAL AND Ten Sav's was Lineau, My Linea D. P. Tomissioners, Marrier Sweet Co., 250 pt. 21.55. after leaving the Navy is fortu-characteristic of the rece who THIS is a surper book. It should have been written in two distinct parts. Midden of its bouth the author. he records furned as borney maretaned while in the service is very happily ac-in the least characteristic of naval choos gardengraphy it is does a right-bent-face with a violence that makes are look tips a dual personality. While a law of his adventions in the Navy is he learned to fly—en which be nd the fame that created a com-it demand for his services—in with mercies and mempiated vin-ducement. Even General Mitchell on the books me the most "Admiral" as on receiv me the word "Admiral" as an epithet with greater effect. Un-fortunately, this violent prelation remark the high command holds have to make some motably management comour for Moddax Air Lines, he uptlendy Messages out as a verstable marking, maintest upon instant respect themselve advocate of a larger de pendence on sirplaces and accraft our

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ercs and by a conduct official concerned almost cuckednessy with secomanifold matters. Long. Versions

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that the author mentions has nothing to do with the case. Something fasher has occurred in all norts of military say

the countries in an entire members are from That is one delete that we can always be absolutely save of deviating a plane can showly be made strong enough for any conditions, as soon as the countries of the cou

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The latter, or commercial section is a mixture of mich purely personal material as the log of a hosesymous flight and of correlated water and material.

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TWO VOLUMES

The Boom or General, by Edwin W.
Treit, E. F. Chalten and Complete, New
West Field, E.S.

M. R. TEALE has accomplished when
my processary a 400-page book on
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1999, 139 Japan, point 38s.

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Getting the Time-Clock Habit



Servicing Short Cuts

LONGER LIFE POR



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COMPRESSION

REACING STREETS FOR MONOPLANES Interpressed Errores Any Dead or Streets or A Monart and Wood, by Krearth S. Word, N.A.C.A., Technical V RRY hole data are available on the comely large to justily further avvestige, their effects of medical bracking task. strain comments and a secure control

mary Connector for Accounties on this publicat is more or less prehimmery, but it is indicative of qualita to be ex-pected from a membership of this nove and nounts out that fauther measurement successment of the approxymatic obstactions of a 5a.30 on standard wind based model of the Gottages 30' and Number in the variable density past of tendens streets of I Section with a Fasciers could be recented either on the upper or lover number of the needed, extending

of 30 deg. The name of the strute were in a place perpendicular to the chool plane of the seriod and sarafet to the section were purgled in the chards of the seriod section. This approximated flattined conditions for conventional admirable above low- or high-wing monoplass.

The report recludes the full tabulated remitted from the rests and also polar diagrams showing lift versus frag-for various combinations of wong and ops were remined off with a strendar are langued to the leading and trailing edges. The upper nursus was then numered off for about \$ in in the larger districtor and I in, as the dismeter he-came less and the thickness greater

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Changes which were combad to the

returned 50 the hanger on its cost of the organ at 200 to of dring time. Each disposer propoler was usual as when his fical assembly and the need and periodecitly thereafter until cost for reharding the origin. It is show hash park ploy bealing of each radiculative and then targets

The remailer was mounted on a Date at the maximum prosers cemie ercopling. In order to y it is necessary for the same to make any given series of rendrant to make any given series of rendrant on an engine, as the rendeng toters by diffigure softriducts may very practice of susking a congression chart size some

Technical Abstracts

result of this investigation are as The representation of street or. drag of the strate above.

2. Street attached to the lower surface have less effect upon the airfoll characteristics than sinute placed upon I The merrimagne effects are self-

> OF PROPELLER TIPS PULL SCALE WIND TURNER, THESE OF A PROPERTY WITH THE DEARWARD CRANGE OF COURSE OF COURSE OF THE BLANK Tire, by Donald H. Wood; N.A.C.A. A FEW years ago it was common

places by simply cutting off the raps until the engine terred at the desired rome. Even more adjustable usual use of its presentation found describle to stake adjustments in this manner. repet describes as averagatita made at the NACA to determine how the characteristics of a propeller are abstract alloy blades. The shorteness alloy blades. The master was 10 ft., this being in, at a firm to a final disse-

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423 by, regues installed in an open cocket fracings on the balance of the monether research trough De results were given in thrust and power (Cr effective thran

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effective throat X valuably of advance The propulsive efficiency and all were slatted assume the samel-wover coeffiocity of advance and P represent, power absorbed by the propeller copellers operating at the name value of Cs are operating under the condiand can be fairly compared terference, plus form, and thechness energing two the problem and it was impossible to attribute the changes in

tive disauter of propeller and body only corresponding drup is maximum effi-ciency, the 20 per cent change is disc-nier from 22 ft. to ft is, resolvery in mately 25 per cent was accredited to the relatively large body, and the form and theirmen resear of blade worth near the tie and

borns wear the hab, large incre-

The report sected: the tests.

The report sected: diagrams signed to simplify the selection of proper propeller for a clean or

The Buyers' Log Book

AIR COMPRESSOR for the spark slogs (cotions). The more shielding in semalant completely AN AIR compressor especially adapted man security in suppose components of regions and ferallic condust which replaces the ordinary open question eyeste without changes of any next in the sequent changes of any next in the sequent changes of any next in the sequent security of the sequent sequent security of the sequent s the Ingernali Rand Company is portable electric-frame component Type 20 It in number to the corremakes of spark plags. — Aveators, days 1957. possing have that it is mounted on roller sany save that it is mounted on roller serving current and is formated with a

IGNITION SHIELDING

Coll trees of aircraft engines in being

POMPLETE against shielding for

bright of electric raids.

The Type 30 is farmabed in sex sam: GASKETS from § 65 by with an receiver, says.

The Type 30 is to 80 and 10 interests and 10 percentage. PRODUCT knows as the Steel-leston gasket composed of automor departed for metamon working arm. succe up to 200 fo. The compresses and in all cases in of a two-stage type g Company, Deirott Mach. High experience in this field of denien. Divide are the southful deap 14 year power from a graciline engine.—Avia-tion, days, 1911.

shifty to adapt itself to various various under compression are none of entstanding claims for this new gasket.

The beckbone of the probet is a steel short which is stamped by a process which produces prograding torques and which produces prograding torques and





Two shorts of arbeidor which care men-rendered impervious to guardine and water are forced down over the tongue The final phase of the coulon is one The final shape of the grants is vis-out after those operations, cauding the mondarityer to greatly usuality his disc, and thereby offer an experimently

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ders - Attanton, April, 1911

OBSTRUCTION LIGHT

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pricement current is furnished on all

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BRAZING EQUIPMENT

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MAGNETIC COMPASS THE Printic Aberral: Products Com-

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ALTHOUGH mechanically drawn Authorstore of a high dispuse of where manages are located more or less security with stopped to the seriromen now offered by the Weston Electrics J, complete of a garganta un tions at the engine, and a small web meter collisioned in angine up to be trues of sufficiency are efferred, one with

a round dial miniter as appropriate to a round dril minuter as appearance to standard pressure gages, and the other of a fee type dangered along the know of larger principleand electrical restrict SAFETY TREADS NEW security floor covering has been assessed by the Melfan been Company of Akree, Olinthe series embedded in a volume robber compound to aveilable in mate

of various right and change, can be said on other trends well-ways, names, shop force, etc. Its weight as given by the manufacturer, in narrowanish 25 th.

naîties Compression of Develo Mich the pilot are totally serviciable under such modelines. The Sperry Harmon has been designed to give the pilot the secretary line of reference requestions enclosed in a disk of velocity of pasand oil-proof typricated cubber, of the conference of visibility networks the conference of visibility networks the conference in comment ris. De cubber corer prevents any testings, and the presence of the break is indicated to the important by the formation of a small loop in the righter (1990). Specially designed conclusion and symple in appearance. in share and service a her arrest the are provided at each end of a length of the composite telling. Average. Paytered in the outer case is the cut of a small sirylane which represents marking in which of its installed. right the small plane is kept in yet

SHUNT OYNAMOMETER gyroocope, driven by air from a small veneral tube of standard design, actually the horizon card. The sustrement study IT 15 common gractics to my the te-rock of an arribane by "feel," but it has been deputemented that the practice seefing tubong neigh also by th, ma-ong the total weight of the metallistics inconcerne, and ready trenton which may vary at much as an aid to corregation and in used in corr

Chariffer Over Proposession

magnific coupling proby bit to fifteen massives. The complete fundhilling weight fi fit 4 on, of which the metric ment libert accounts for 3 h 12 on 25 per cent. John Chetifon & Sons of 89 Cliff Street, New York, N. Y., has classed on the market as between The balance of the weight is in the and on the market as legarization. This reprises it measured as a legarization. This reprises it measured to income the control connecting indicate waveners of editions of feet in the control of the co come as a Shart Dynamouster or resources designed for the threst second of the contract of the conchanged by meun of a hare

red, clumped by means of a ba-leter, and the artisal termine in a wire in indicated directly on the dial ATEXTON, Aired, 1972. TWO. WAY PRONE TWO INSTRUMENTS

THE use of a one-way voice phone from improved to pepil was one atto away from the era of fluid on struction by hand signals. A two-way

an and to narregulate and is need in one parection with a magnetic, or earth in

ductor common. It common of an au-

driven gyroscope carrying a compan-nued and provided with a locking device

card can be gasly turned to color with the reading of the magnetic re-pars. When the locking device is based the directional error is as in-

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is accuracy of 2 deg to 3 deg in one. In long straight flying, the gare need, may be resent by therefore, with

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that some lime of reference he avail-to the prior by which the appala TUBING of the singless may be enoughly the white will find a plant a solution studied.

TUBING of the single singl Side Slips

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It would certainly be tough to be teable to catch up with the base they again even by putting your sirplane in

Not an remarkable, lamever, are the reports on the name ship found in the reports of the lames ship found in the Mancheld (Chim) Jenned by C.R.P. "New York Feb. 7 (A.P.). A snapkase so small at one he folded up and bestieved down on the deet of a nati-

natived down to the deck on a nor-marise in these calendar has been flown ..." That free for folding up and bettering down has been bettered many

PMs. HMP, of Springfield, Mass. sends in some ellippings on the subject of Cast, Motories Camabelly, meet

and are slad to state they still another

times corn with larger above

of Capt. Motours company, special services to record as an automobile on the sector I Duytona Beach, Fla. We now have

we than four requires and dad their in tresh a sound record without "transf-ier ranks from all rame to propole and report of the proposed sound of the sound of

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er after boving called the Murphy e. 'Hello Inshelle,' Murphy niek, he home at hi have dancer conte.'

This stem got into the newspapers cause of the bushesd's arrival at the cause of the bushesd's arrival at the

the telephone connection as you may have thought at first. If the discou-had been ready at 6 the sum regulal

As as so often the case the servepapers maked the really important points in their story of Man Natholic recent

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or at the women's nettrade recess-

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that make of resident bade with for turned inward. Short Alaska, after boots with gally beaded tops about the contains. The firing said

y on the estande. Miss Nichels was times become into it and when the parks was

shirt and four sweaters ranging from old rose to purple. Around

good reporting at all, you see West pre-inggest that is covering bales acro-maginal structures on the instant that the b-Tina Elying Nutracy our Bridge-manifest structures on the instant that the b-Tina Elying Nutracy our Bridge-manifest of the structure of teresting cipping from a local paper, describing a last given by a war pital before the local Y. M. C. A. PAs we have remarked before, the d up over it hard litter, and the of lates, Mr. Lorenny's folding plans bonte when the hombing plane is when he and member British flory were management over the Turks, can out of ammending several much introvat resy mystemous characteristics, according to the newspapers. Consider the following from the N. Y. Hered-Tribuse: "The test showed their it has a structured strength for a fall power than 8 the test of the following the structured strength for the following the structured strength for a fall power than 5 the following the following than 5 the first the following the following the following the following than 5 the following the foll mmmration, around such introat. The oranges, dropped from a great beight, struck the Turks with such tores that they literally applied stropaction of pieces, he said, many of the fragments sersonals wounding the Anyone who has ever been hit by a fragment of a Tork knows that it makes a marky wound. A point on which wo'd like the news-papers to be more careful, is, when speaking of "serplemen designed to field P-Lorence (A.P.) July Bull has deformure of the recovery then aenther seen about a from a Seartle Wash paper, called to our attention by X.W.B. "New York, Proder, Feb. 5. are on the wings, Fired at once by the pdist the gens make a rose of bellets that good a few hundred years about the grown from Mr. A. M. M. of Williams

town, Man.

While we all loops that all of these peace pocts, disarrament agreements and Leagues of Nations will be effectire, it might be a good idea to start THIS MONTH'S ASTOLINAISE APPONAUTICAL EVENT DARRING, Dex., Peb. 7; Barne

ventoriay only slightly hart after full ing 3,500 ft. to the ground, prepare today to take another plane to Lo Angeles. A wast fell tree Taster He walked us make becade



Look for this sign of happy landings at the National Aircraft Show

It shows which way the wind is blowing in the development of airplane landing year More and more airplane builders are standardizing their ships on Timken Bearing Rouipped landing and tail wheels for greater efficiency, safety and endurance,

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CURTISS-WRIGHT



Heavier, a ship which large up from a fire-same field z, which the Go fig a strices z, each the S relies to the contribution of the z and z a

refused design, the "James" offers visibility so

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IF. LOUIS, MO. WICHTA, KAN

AVIATION



Rary and rusted for anothers, sixtly and stable for students, the sleekly stream-lined new TRAVEL AIR. Sport. Trainer is a striking symmetr of the hearing you pain to a ship built by the higgest builders of many types of planes, @ For this latest TEAYEL AIR model offers any number of new Assolutions in stability handling and servicing case, and smart, searts looks. which can be effected only when an executation builds for the whole field, a You'll like the Sport-Treiter's clean-out lines, its smooth ours ereed of over 100 miles on hour, and its cruisian reason of horses than 500 miles in You this armship ship is so nimble petring off the ground or floating

back, so mable to the six that tr's testand the

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morrison of abits's to the a Proposed with the would femons Wnght-Giper engine, equipped with a remarkable development in full wood, shock absorbing landing goer plus brokes, the Sport-Trainer is designed in every detail to make fining not only almale but increase. sire. See this TRAVEL AIR at your Certise-Wright

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dealer's new, Compare its value! Fix it on your await

WYUGE FAN

SNUG AND COZY CLOSED PLANE THAT'S ECONOMICAL TO FLY. I



Cortise Wright's new COUPE is a strikingly stream. head, law wine monaplane, that makes fiving crosscountry in seats side-by-side just an every an a cur at a cost assertationately the same, @ Its world found Weight-Gipey regime of 90 h.p. gires you power and speed calcer. It takes off said lands lightly on the roughest, touchest fields. For abooks are amounted; absorbed by its olso struck, its asmi-balloon wheels mounted on a wide solid leading over a The COURSES cobin is exactly finished with deep uphelmery, Protested from wind, worther, and point you speed in the COUPE at 110 m.p.h. . . . craise at 90 for 500 miles or more . . . enjoy perfect visibility on all sides from your roomy and completely

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perioduction of handling a ship on exceller halfs on simple to control, that it's one of the earlest in the would to fir a To supposite fully what Contine Wright engineers have accomplished in producing this regard, refined title plane as some its mortise performance. its componer of 15 miles to a gailen of gas, go to your Carries. Wright dealer's right way. Get in this ship and see for yourself! Comparison is the heat test.

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Officeing all the strength and stemins of the worldfamous maker and breaker of proceds for and anger, the striking new Cortin-Wright SEDAN to a colour succesplane for four that's me smeet so it's stordy, so may be n's reliable. • For into this browless fearmone than Curtiss Wright's regimeering staff or Wichits has incorpersisted devices and oless developed in years of research and production of practically every type of plane that files. · Powered with either · Challenger engine, at reducence fame, a 210 horsespeer Kinner or the world around "Whirlwind 260," thus remarkable new MIDAN has repeatedly nevered its ability to ant-clink, out ride, and completely out-manexcess plane after plane yet no so its match to size.

type, power, or price. In using consider you relax.

terror, while this stable, second, riding this makes each . With every feature of constant for namewers, with every convenience for the pilot, built to stand rough going surriend and hard coare shelt, this new Costine Wright englaced this in the plane was "Il he moved to com-Go said see the SEDAN at your negrest Cortins-Wright dealer's new, Get in and try it. You'll want to still it sweet

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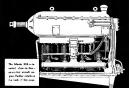
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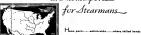
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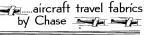
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suffering and different more injurious for the future, But, whit is more injurious for the future, it has also accured an indirect densated for a carefuley analysis of the weak oppt of the luminess and connected options under which which consists was pushed. It is an enought of the connected options of the conquestions whether there recurring periods of becens and depression see not preventially whether it is possible under heter managenessed to incure greater security to all classes of people when are elificate to work, whether and the contract of the contract of the contraction of the contract of the contraction of the contract of the contraction of the con-

shanizeds of laving can be preserved. Evidence is multiplying that these questions can be answered in the affirmative; that this challengs to the Assertions businers and economic systems can be not in such a manner as to justify our confedence in them. It shaded of regarding haviness depression as a shorm to be weathered or a condition that must be undured and adversed to "most head" and out." this little trees are becaming to look." upon it as an economic plague that can be swrited and hiped cut hy preventive meaters. Sentiment is stirring in favor of deing concetting shout it, hending the twenting of our latest experience and preparing actively to meet the issue it mines. Hit the responsibility of the laminess pran to expitalize constructive policies and to reasonage programine leadership. Therefore, the McGraw-Hill Publishing Concern desires to

do it part in belging to clarify the orbustion and to strendate thought and solicin. In believes in the philosophy of infinitional enterprise and copectative effect on which American addressment has been based, that it has conducted in the part of soch hastness unit, large or wall, our hardering houses as a whole reorusit, can show in part of soch hastness unit, large or wall, our hardering houses as a whole reorusit, can show in part of soch hastness unit, large or wall, can show in part of soch hastness unit, large or wall, can show in part of soch hastness unit, large or wall, can show in part of soch hastness unit, large or wall, can show in part of soch hastness unit, large

PLANNING IN RESENTIAL for uninterrupted progress. To assist its such a program the McGinn-Hill Publishing Company, office through its publications the following prinricies and precision suggestion as a gridryles and precision suggestion as a proposed of the property of the property of consultant as a production on which lumines can be built with some protection from the sheets and dislocations that have played it.

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GENERAL ORIECTIVES

The following general objectives are fundamental in planning sound business developments:

1. Maintenance of Established Standards of Living

names. Bather it ment rentert and tensorer car production of wealth, that technical development pursues. Matter it must protect and preserve our personantly services anemphyoment, or that standards of living counse he indefinitely increased in an economic fallney. American huniness

taining high easthroing power and regularity of employment and dividend dishumments, based on more stabilized methods of management and fearcing made possible by long-term planning. should not visid to it in any of the policies it

surfinds of management, and new devices for financing industrial and market expansion. Increase efficiency in the reasonate production and distribution of soods and married as as to furthern their widow nearlife consumerion and thereby rate the mandeed of Eules of the American revolu-

9 Subilization of Future Business Growth

So long as there are wide fluctuations in beniness and in price levels, the gains to some groupe are cancelled by losses to others and there is no not gain to the country as a whole. The interests of subsedireted to the intensity of those concerned menines. The letter should have a leaver measure

business operations. Such effort involves market medicalization of factors and office methods from capital investment in 1971 for the nuteration of baseder redones of coordination within the inches-This leadership can be exercised only by a more national management

Addresse recess of long term planning and RECOMMENDATION: Direct individual and remained effort to check executes and unbulenced Industrial and Stancial expansion, and provest wide changes in price levels. This will remove the incentive to speculative gain, would conflict of creditor and debug around and promote confidence in loss term investment and horsewise. It will

3. Promotion of International Business Cooperation

The world is economically interdependent. Though the United States is the dominant factor in world prosperity, she exercit maintain or increase her with the world, nor can her business system surtional cooperation on the part of American busiyear to agent in the gradual reduction or removal of annecessary trade barriers that interfere with lised international mechanism for the movement of capital and occupal of capits and the mounts

WINDSHAFFUNG TUNK, Greener in Artificial or committed offer an assessment consensation

4. Encouragement of Private Initiative and Responsibility vs. Extension of Governmental Activity

American business should encuerage self-coveramost. It has already shifted enough of its respecability and thereby violded exceeds of its initiatire to exceeded and west stand its example arriest further extension of successmental action in matters in which it can ansays re-monthabty itself. The executal function of covernment is to keen riese the field of economic activity for private count competition in domestic and fundaments. It should refrain from competing with any kind of business steel. It should facilitate and oncourses the development of necessary controls It should saferyand the economic stability of the country by magazaning stubility in its own found and international policies. It should reduce to the minimum the number of laws affective business

RECOMMENDATION: Oppose governmental resolution, sessod or recombinate which couls so limit or weaken private individual individues or compression effort, or to distinct the responsibility of the individual business concern or countried industries

for the accomplishment of the objectives strend above.

RESPONSIBILITY FOR ACTION

This course of action for (1) the maintenance and report private infliative and consensive effects recent he carried out without the samest parthe stable development of American business (V) ticipation of individuals and organized groups the proposition of international concentros and representing all types of business and industrial (4) the restriction of governmental sucroschment seffects:

Upon the following major groups the sagin burden of recommission resta

A. Industrial and Business Management: A few thousand business concerns in this country exploy the bulk of the ware-earners, originate most of the consumer income, and produce the chief part of the goods and services that determine these concerns therefore rests the mass responsibesty for action that will;

(1) Personal transferor when the remove analysis of the (ii) homest emperative effect through industrial, trade and responsible constitutions. 13 Majorain ware codes that persolt a bigh standard of living

accommissed in periods of prosperity the such use in shock

(8) Maintain and equality employment by adjustment of (i) Establish a source to protect the security of employment (1) Maintan reamable, stable devidends, reserving ou

B. Industrial Trade and Commercial Owner instinger The pieces of besidess write is multitheil and their badentin is strengthand by vigoreus, intelligent and far-righted trade organsations. Through them it is mostly to corry the forestime tringcoles into action on an industry. wide basis, which is necessary to their realization in each industry as a whole and to the cour balance among all industries moviete to stable progress. They should exceed in

(i) Collection of data on costs, stocks, seedsoften, promise (ii) Development of codes of practice (6) Establishment of standards of supplement solution and

wages within the industry. (8) Development of opportunities for stabilizing business.

C. Bunking and Engerial Institutions New to the will and intelligence of individual and occurs and business the most important factor in achievour the four charefores of this relations is the region. standing and properation of the backing system in checking encession inflation in times of recoperity and expensive deflation in times of decrees. sion. In the exercise of this function, hustreen

their may well report banking and financial instricteds to: (1) Epsysion business managements for think in terms of long-

(i) Exceedings respectations to accommists extensively as-(I) Discover the extension of successes could in persons of arrand property and in like meaning facilitate buildingly

(C) Saint to the properties of purpose where and heartly can eigh offer current

D. Labor Stability of industrial and harmon operations requires a sympathy by American workers with the policies expressed in this old. form, and a wikingness to conserate to making them effective. Responsibility mets upon labor se well as upon management if the worker is to enter the benefits of our business system. To this end labor should actively support those principles

(i) That more and wager are described uses correspond offi-Charles in temperature and detailering entiry higher spendards of hving (i) That employee specialty on a program of long-time plan-

may empire the maximum stability of qualifying (b) That have should drowed of their leaders an understand. 00 That the welfare of later will best be served by recourse to

00 That the development of extensational tends is recentled to (O That the extension of governmental activity hongers bus-

E. Corporament The especial function of pyrerpress is to keep clear the field of evenues. ectivity for private business initiative and to sesure a basis of fair and equal competition. It can

best promote sound economic development through those policies: (f) Lead to the development of external and featured except (i) Refinis from computing with any kind of braucou start!

banners through self-preventant rather than he benda-(f) Subsected the recognic stability of the country by man-

(C) Exercise the executed exercise in making executions (i) Redoct to a minimum the number of laws affering beat-On Congression with Ferrogan automation that failbest abundances or

AND IN CONCLUSION

as they are product in the observer of individual conserv ecepations and in the programs of those mental assumes that are responsible for the conthey constitute a platform of economic principles and business referes once which for sighted management may sell make a stand New conditions of our markets included shift. sation have laid new second responsibilities seen those men who early the destines of business exterpose. The protection of the welface of workers and their security of employment and the become basic factors in the attitude of realisopinion towards industry. And public opinion in the end has the power to measure or to certail that freedom of initiative around which the whole philosophy of American life has been oreasised. Business management must meet the coll of

MENN REPOSEMENDATIONS can have value only

the world are to be lifted out of the newest done rice and given assertant of eventor stability of current mover in the future. Business inschembles ited must strengthen and sever the current of this system of private initiative and consecutive effort upon which the prospects of this country has been founded and of which it stands today as precisely the sole emonest. This reversed pletform is being presented to American business through McGmv-Holl upbles-

firm teaching into people some paint minutes in the country. It will be developed and interpreted editorially as a guale to the formulation of mdividual plane and baseness pubries. As a FURTHER AID in that direction the

reader will find within this supplement a check short of practical suggestions. Many of there are business concerns. It is believed that they will be of value and assistance to all American businessees. these responsibilities, therefore, if the neonly of in planning for future progress and prosperity

A CHECK SHEET

of Practical Suggestions for Planning a

Company Program

I-Lone Term Planning of Business Operations

A. Defeated absolute the social period as the basis for hustrees operations, except in accounting

B. Tagaza assuach from the customer's standpoint to determine

50. That additional markets can conflictly be prescribed with them laws the Budgers

account just as they do the cost of a patent or a new building.) C. Carry this loss tone planting rate rate color control, irrelying distribution methods rate forecasting Sales and procing.

Control (1) Bride present methods of distribution and service to continue to the best beloward of the restressor (4) Proper sale Connects by products and by statistics with report to compelline. Gauding institutions have been that their majors are to produce on the connect setting to the first year about and within 1 to 10% for these recent

50 Enter costs and also refling at a box. Ministers from marinean prices based on production costs. (Baseson industry shown a high degree of prospectly among those compenses loops or much, where have lead the coverage to stand up a management that, manual a pools? (i) Flore asker requires know, sales program and astrophing on at boat a three-poor boson.

D. Hen for aniform production on for about as possible on the basis of sales requirements aboutly Production determined. Medicalistics (i) Medican antespine every reading production builty, including photo-factory and offer conjugated and notice where is in product to other cost reduction and greate production feelingly. States bears, and offers have a

promotion present on sets that Perbities ().

(If the not expend persistation furtilities on the mean large for horse stock through buyer production, but only where the long term dominate alread the committy for additional Particles.

E. Statilles Standard, Working contail respirements for labor and material, and baseness careful. Publisher motion about by long term phonoises (3) Do not depend personnelly uses hack could be propose other than short-term learn for content working explicit.

TATORIA PRINCIC (PROPERTY

II - Coordination with Industry or Trade

As The success of long-time planning for an individual business is multiplied and sociated throughout the individual business is multiplied and sociated throughout the individual business is multiplied and sociated throughout the individual to individual individual organization—
(5) for sollest facts or multi-value providual providual individual polynomials and individual configuration.

(d) in take full advantage of logal facts congression.
(d) Congress is matching standards of respiratory automa and wages without poor industry. States in perfect appropriate to entirely appropriate to provide appropriate to the confidence offered by a System where long from pleasuring gives stable simplepriess?

III - Promotion of National Promorts

A. The not profits of a modern business depend not only on its own notivities but an nonlineal business stability throughout the constays. There is a vital responsibility upon such business entirples to do Furthers to provide automate inhibity of purchasing power through.

(a) A polory for regularization.

(b) Equilità is manerous payerdi based on the planned program of production and subscand omitties this minimum payerd as a final charge on the handown. "Scrought—the Frentze & Gentle plan)

(c) Madricos a nature of suppose most their promises high standard for bring much their promises high standard for bring much their promises high standard for bring much their promises.

(6) for the presence of partners the source of an appropriate to taken to remove partners.
(6) Earth the templated to be pay and exercisely using a developed put to beam times. Bother plans arrows meetings in supervised the not beating to the templated to see this respect to beth plans in manufacture partnership preventioning preventioning preventioning preventioning.

distributed distributions (a) (Simple-10 it Simple-10 it

By Zech homeons retrypted has a responsibility to end in the development of regional and national retinance.

(ii) Emmanase and composite in the mendination and geometric of the monator area in which you may be start throughout manufacture property in the proportion of the monator area in which you may be start through the property of the proportion of the monator area in which you may be start through the property of the pro

Method

Resource

(2 And is the work of automatematical surface of the approximated to approximate consumers, assumed as the assumed and the approximate of the appro

IV-Maintenance of World Business

Parkably the greatest potential so that for general and fature Associate products lim in that foreign field approached by the general difference between the living standards of the Associate public and those of a billion and shall people as many atthe countries. Any slight increase in the twent people are not all liming insurables benefits to Associate in the twent people and of these people as and the liming insurable benefits to Associate measurement, as the

As Support cooperative studen and the resolution of morth politics among business interests through interesting incident experientian on each subjects at —

(C) World traville.

(D) Thate distributions

(D) Sets registered intervenent of capital population.

(E) Wir delta and representation.

mdasters.

B. Personale audiomatic as foreign trade practice by encounaging coordination serong expensed



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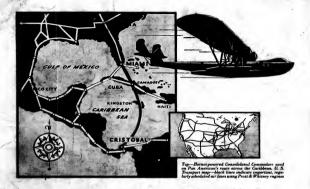


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scheduled over-water route, engine reliability is of supreme importance. And the Pratt & Whitney "Hornets" used by Pan American are delivering steady, unfailing performance. Sotoo, on approximately ninety per cent of the other regularly scheduled air transport lines of this country "Wasp" and "Hornet" engines are making air power dependability a matter of certainty.

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